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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.
- (4) The word count of this research report is 14,215.

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List of Abbreviations

CPI	Corruption Perception Index
GDP	Gross Domestic Product
PF	Press Freedom
POP	Population
ROL	Rule of Law
TRADE	Trade Openness
UNDP	United Nations Development Programme

Abstract

Corruption is one of the biggest global issues despite poverty, unemployment, income level and terrorism. In this study, we concern on (i) the role of press freedom toward corruption, (ii) whether the rule of law is a mechanism for press freedom to influence the level of corruption and (iii) the intensity of rule of law in different background of countries on the impact of corruption. The panel regression model is based on a cross-section of 95 countries from the period of 2005 until 2014 and Fixed Effect Model (FEM) has been used as a tool for the estimation purpose. The empirical result shows that the rule of law and press freedom are both highly complementing to one another in controlling the corruption in each country. Lastly, we suggest that the rule of law needed to surpass with a minimum value in order to capture the effect of press freedom on corruption as one of the policy implication.

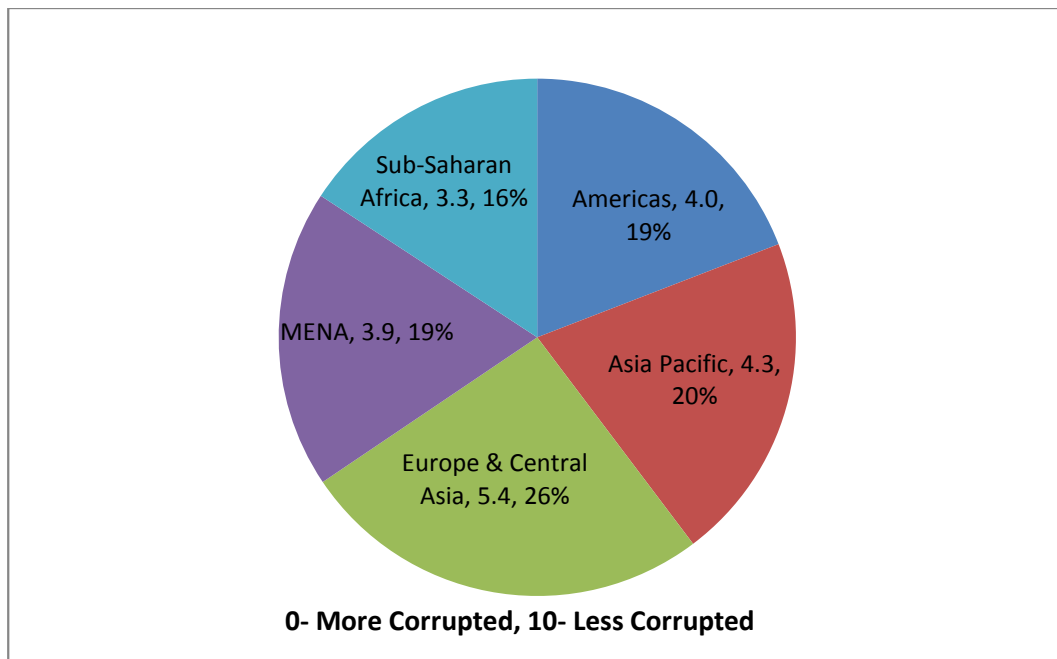
CHAPTER 1: INTRODUCTION

1.1 Research Overview

Corruption is one of the global phenomenons. However, corruption can be mean by different things for different people as there is no fix explanation on the action. Although the term of corruption is hard to agree on a precise definition, there is a consensus that corruption refers to acts in which the power of public office is used for personal gain in a manner that contravenes the rules of the games (Jain, 2001). In fact, the bribery activities can be benefited to more than one party and not all the corruption involve the payment for bribes activity. As an example, corruption also can be when an office-bearer engages in cheat incident by claiming to have healthy issue and make use of this as an advantage to go on vacation is misusing the public position for his or her personal benefit. In conclusion, the corruption means the abuse of personal power to obtain personal gain through illegitimate action with the expense of others.

Based on the Corruption Perceptions Index 2015 which generated under the effort of Transparency International - the global coalition group with the purpose to against corruption by promoting the living of free corruption in the world, had reported the global condition of corruption by dividing their investigation into five main regions- Americas, Asia Pacific, Europe & Central Asia, Middle East & North Asia and Sub-Saharan Africa (Beddow, 2016). It was reported that the average score for global is 4.3 scores, which indicate the cleanness of global condition not even surpass the qualified standard of 50%. Meanwhile, the report also point out the highest and lowest score among the five regions where Sub-Saharan Africa and Eastern Europe & Central Asia acquire the lowest score of 3.3 (more corrupt) and EU & Western Europe score the highest of 6.7 (less corrupt).

Figure 1.1 Corruption level in each region



Source: Corruption Perceptions Index Report 2015

Figure 1.1 shows the corruption level in five regions namely Americas, Asia Pacific, Europe & Central Asia, Middle East & North Asia (MENA), and Sub-Saharan Africa measured by corruption perception index. In the cases of Europe & Central Asia, the statistic shows the corruption 5.4 out of 10.0 (Beddow, 2016). According to the statistical result, the score does not show a dramatically improvement level as only handful of the countries show improved. Even though the government shows supportive and willing to open up talking for the new laws but the execution seem to be another matter. While thousand media reporting that the government rearrange of new law, however, most of the proposal do not seem to be put into practice and it is just like an empty promises to ease out the media.

Comparatively, the corruption level in the Europe & Central Asia is the least among the other region. In fact, there are three countries that score top 10 of the least corrupted countries comes from this region. Denmark was the well-known country with highest score 9.1 out of 10 of Corruption Perception Index (CPI) as their civil are given fully space to voice out their perception and the press freedom are highly promoted by the government (Aghekyan, 2016). On the other side, corruption still remain the biggest challenge as there are many countries with

low score of CPI and the government in that particular countries are restricting toward the public and media by stating that the situation is not stifling, and no prevention needed. For instance, the Turkmenistan scores lowest (1.8) in the Europe & Central Asia. It is because although the constitution in Turkmenistan was guarantees freedom of speech and the press, but the government had restricted these rights in practice by stating that defamation is a criminal offense and the penalty for defamation is prison term as high as 10 years in prisons (Aghekyan, 2016).

The situation in Asia Pacific also making no headway to the investigation as the statistical result shows no significant improvement in corruption. The average score in 2015 is 4.3, the result does not show any improvement (Beddow, 2016). Despite the boastful efforts on fighting corruption, the popular scandal in Asia Pacific region (1MDB scandal) drawn out the crucial point where question the public: Is political leadership to crack down on corruption truly works or is it is just a false appearance? This problem faced by the Asia Pacific region even if there are signal of supportive action from government site but it does not really mean the government do work on wrap up corruption since it does not show any changes in the corruption index (Plipat, 2016). In Asia Pacific region, New Zealand score the best among the other countries with 8.8 scores as there was an established of Transparency International New Zealand alliance with a vision to build a trusted integrity system in which the country will be free from corruption. The public sector in New Zealand has been awarded as the most trusted public sector since it has a long tradition of being first with legislation aimed at promoting human rights (Transparency International New Zealand, 2013).

Americas region score 4.0 in the average corruption level being treated as the poor corruption management region as it does not surpass the minimum standard required of 5.0 score (Beddow, 2016). The poor management were worried by the civil as it will bring the effect of slack in the economy which will cause people more hard to survive in this slack situation. Canada was the top scorer which is the most corrupt free country among the other countries within the Americas region with 8.3 scores. The effort that places Canada to become the corrupt free country is the training program for police namely CivPol which is run by the International Peace Operations Branch. (Kielburger, 2015) The purpose of

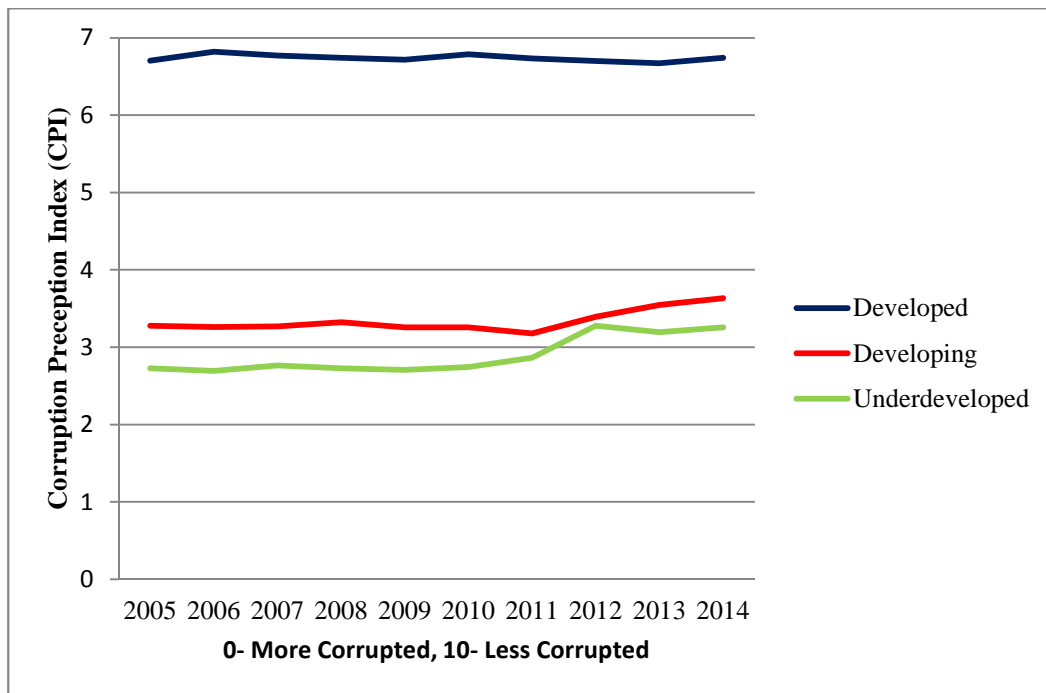
the training is to build up a competent and honest police force, with the mission to reduce corruption, improve human rights, and maintain peace. On the reverse side, Haiti scores the lowest within the region with only 1.7 score as the government was facing the challenge to conduct and structure well for a law that provides criminal penalties for the official corruption (Organization of American States, 2005). Therefore, often the official can engaged in corrupt activities by avoiding the law with impunity due to the ineffective uses of law.

Figure 1.1 also shows that the Middle East & North Adrica (MENA) region is the second lowest among all regions. As refer to the report, the MENA region suffers from the problem of corruption since the early of 2000s and the key factor that causes this to happen is due to the poor governance (Beddow, 2016). Nevertheless, within MENA region, there are three countries- Kuwait, Jordan and Saudi Arab have shown consecutive improvement and this brought a signal that with the well structure governance rule and regulation, the situation may improve. During the year, there are also some opening up with the participation of woman in political life where it indicates a good hint in curbing the corruption. However, the bad aspect is that with the arises of ISIS issues, this become an excuse for the government that the civil are illiteracy and immature in thinking and make use of this opportunity to crack down the civil liberties in the hope that people will stop reporting the corruption (Zughayar, 2016).

The Corruption Perception Index in 2015 presents a worrying picture toward Sub-Saharan Africa region where 40 out of 46 countries illustrate a severe problem of corruption and there is no signal of improvement (Beddow, 2016). In this region, Botswana scores the best with 7.1 scores and Somalia scores the lowest of 0.8. The reason that causes the Botswana scores the best is due to the government take over the media using the stated ownership to mouthpieces for the government, therefore the information transmit is no longer the pure as all of the news were reported the good things about government(Aghekyan, 2016). Somalia was continuously suffered from the violence cases where the government does not implement anti-corruption laws effectively, and officials engage in corruption with impunity (HRR 2015). Governance in Somalia is, to a large extent, based on informal mechanisms and institutions, which are in turn, based on patronage and clientelistic networks serving personal interests and affiliations (BTI 2016).

Therefore, a question often arises in public mind that whether the income level of the country is a matter on the impact of corruption? There are three categories background of the country: developed, developing and underdeveloped countries. The developed countries present the countries with high income level, developing countries present the middle income level and the underdeveloped countries present low income level.

Figure 1.2 The Average CPI level in three different backgrounds country



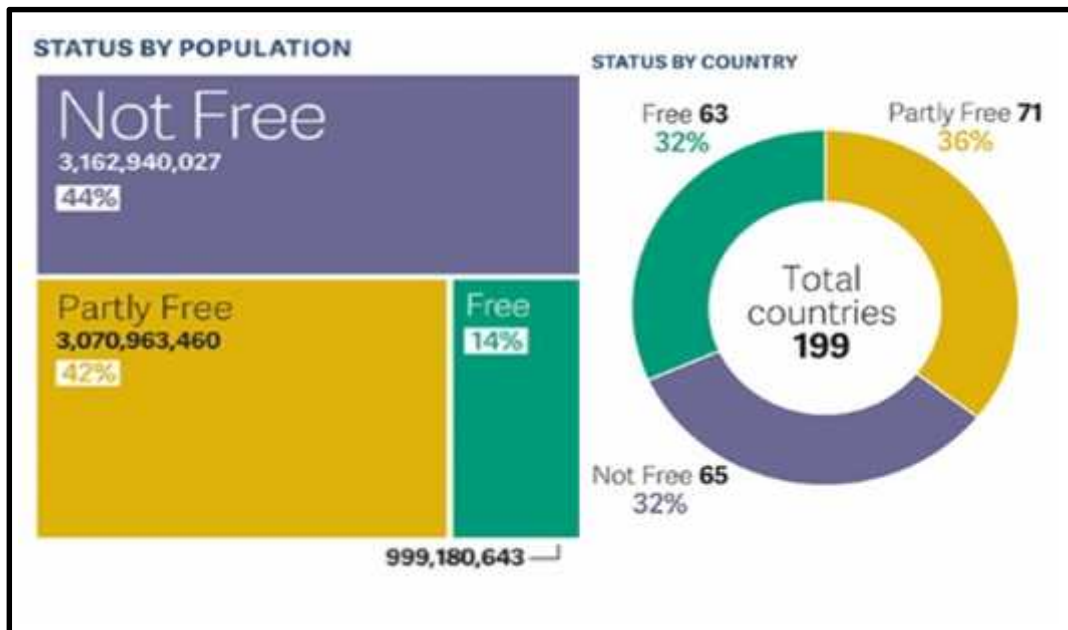
Source: World Bank (2005-2014)

Figure 1.2 shows that the level of corruption in developed, developing and underdeveloped countries over the 10 years. Developed countries were reported to be less corrupted as compared with the developing and underdeveloped countries due to the reason of legislation and regulation and the poverty condition of the country. In underdeveloped countries, the ability of government to enforce laws on the restriction of corruption is limited where the government itself misuse their political power to suppress the public. At the same time, the public are too flabby to fight against the government which indulge the politician and government and creating a mind set to those corrupt parties that the public are weak and unable to

withstand the government. Therefore, the poverty and legislation in a country is very important in the determinant of corruption where the developed countries are less poverty and the corrupt behaviour tends to be lower.

Throughout the past 2 years, the global press freedom declined to its lower point as the administrative by the government to protect the press media are not well conducted which enable the political, terrorist, criminal and businessman to take advantage over their power in order to tackle the press media. Based on the report by Freedom House, only 13 percent out of the whole world's population enjoy a free press which mean that fewer that one in seven person live in a country enjoy their freedom in press. As the following table shows the press freedom throughout the past 20 years where it clearly shows that the percentage of countries that enjoy free press keep on declining.

Figure 1.3 Global Status of Press Freedom

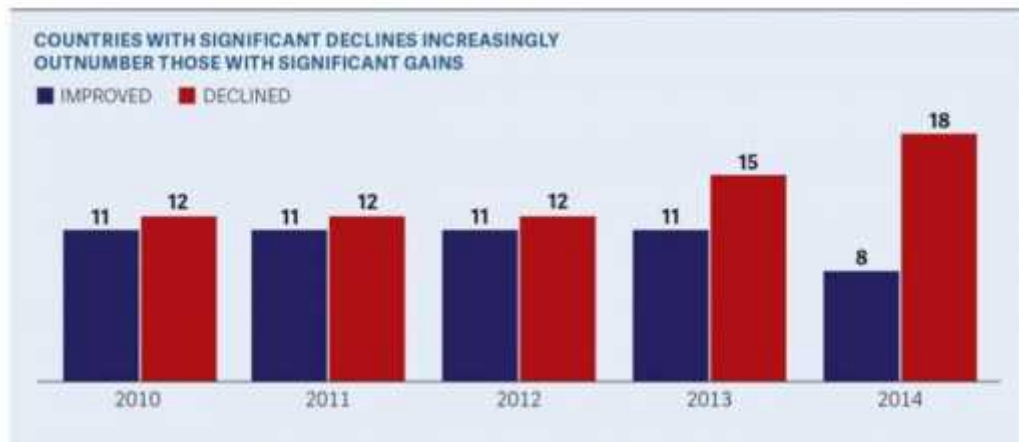


Source: Freedom House

Figure 1.3 illustrates the global status of press freedom according the population and country. It shows that 44% of the population are not free, 42% of the population are partly free and only 14% of the population are free in term of the speech. However, if we look at the status by country, it shows that 32% (65

out of 199 countries) are not free, 36% (71 out of 199 countries) are partly free and 32% (63 out of 199 countries) are free. From the statistics shows that even the countries with freedom is 32%, but the global population that enjoy freedom to speech was only 14%, which mean that a country that free in speech doesn't reflect that everyone in the country enjoy the freedom. The press freedom has facilitates the flow of information between the government and the public, and it also becomes a platform for political discussion in order to concern the cases of abuses of public power. It was believed that an unfettered press bridges the divide between government and public (Besley, Burgess & Prat, 2002), decreses corruption (Djankov, McLeish, Nenova & Shleifer, 2002), encourages political participation (Leeson, 2008), fight extremism of religion (Amam, 2002), and facilitates economic growth (Roll & Talbott, 2003). Therefore, the presence of press freedom is powerful to help in a country's development.

Figure 1.4 Countries with declined and improvement in press freedom



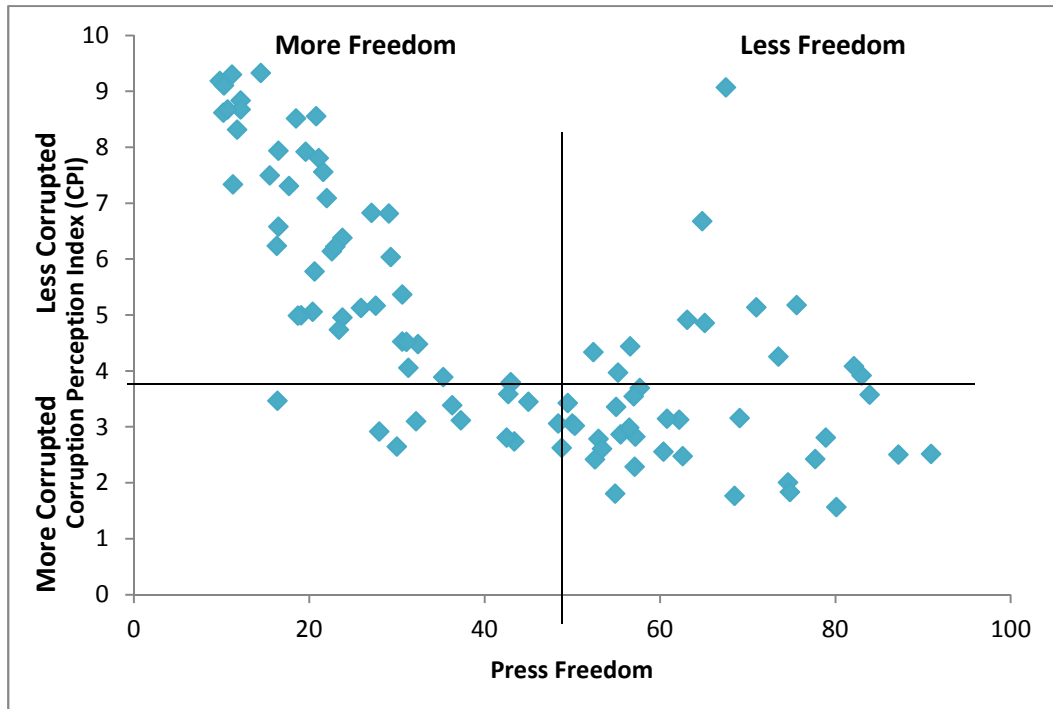
Source: Freedom House

Figure 1.4 shows the countries with status of press freedom from 2010 to 2014. In 2010, there was only 12 countries show declined in performance, however, in 2014 the declined in press freedom performance increase to 18 countries. According to the Freedom House report, the reasons that cause decline of press freedom in worldwide are due to the partisanship and polarisation that exist in a country's media condition and the extralegal intimidation or violence

that faced by the media (Aghekyan, 2017). However, the problem seems to be more acute in Middle East areas where the government or authority pressured against the journalists by threatening with the phrase of “with us or against us”.

However, based on the report on 2016 Press Freedom, it was characterized as the worst year due to the erosion or collapse of democratic society. Out of the 11 countries that have a trend arrow in 2016, the result only shows one denotes improvement while the remaining 10 countries shows fall back situation as compare with the previous year. Colombia is the only one with upward trend arrow as the government and FARC guerrillas work together for the peace and leading the society in order to reduce the violence cases toward the press media. On the other hand, the countries such as China, Ethiopia, Hong Kong, Mozambique, Nicaragua, Philippines, Poland, South Sudan, Turkey and Zambia present a downward trend arrow which due to the government action toward press media (Aghekyan, 2017).

Figure 1.5 Average Press Freedom and CPI level between Year 2005-2014



Source: World Bank (2005-2014)

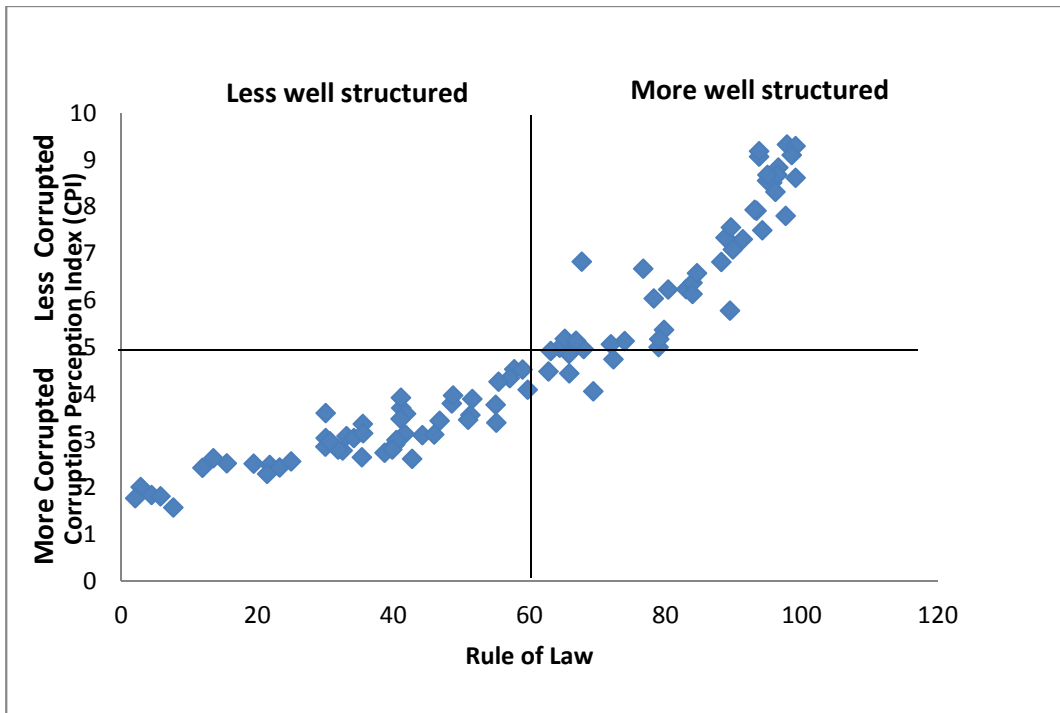
The Figure 1.5 shows the countries' average value of press freedom and corruption between year 2005 to 2014 which developed from the data collected. It illustrate that a large number of country falling under the 2 different categories. The first category is more freedom on media with less corruption and less freedom on media with more corruption. It truly shows that it has negative relationship in between press media and corruption and the press freedom acts as an important mechanism in influencing the corruption.

By looking at the cases of Denmark, Finland, New Zealand, Netherlands and Norway, these countries scored the high in the global press freedom index with the encounter of total 180 countries. All of the five countries with freedom in press are contributed from the good governance control of the restriction of press by allowing public to have their own perspective toward the issues. Due to the strong in press media the five countries have scored a good ranking which being reward as the five least corrupt countries in the world.

The corruption index perceived by the expert in the field verity that Denmark was the top cleanness country out of the 168 countries that perceived and they found that the key factor that assists the country in achieving the anti-corruption and process of fighting corruption is the press freedom Ellyatt (2016). Denmark is well-known in enjoying a vibrant media environment in which the media are able to have their independent viewpoints and are protected by the government as well as free from the legal restrictions and threats or terrorism by the government. With the freedom to express own though, the corrupt actors are getting pressure from the public and in result less likely to carry corrupt activities. This is because once they had caught in bribery, they will be granted with heavy penalty that make them in trouble.

Alternatively, there are also some cases which indicate the country with less freedom will tend to be more corrupted in the country. The country like China, the government restricted or take action against the press in order to restrict the press from reporting the relevant transparency information about the government internal processing. Therefore, without any evidence or reports that suppress the government power, the government corrupt behaviour tends to be more excessive (Aghekyan, 2016).

Figure 1.6 Average Rule of Law and CPI Level between Year 2005-2014



Source: World Bank (2005-2014)

The analysis concerning corruption is intrinsically related with rule of law. Now a days, the world bank consider the rule of law is one for the important dimension of governance in the control of corruption in the countries. Based on Figure 1.6, it clearly shows that the average rule of law and CPI level between year 2005 to 2014 where it illustrates that when a country is more well structure in term of the rule of law the country will has less corrupted whereby it mean that the position of law is actually very important in determining the corruption level. To clarify with more clear understanding, the anti-corruption campaign, President and Communist Party leader Xi Jinping stated that the most effective method to reduce the corruption is to develop a powerful, reliable and transparent rule of law in the country. (N.A, 2014) It also mentioned that with the strong rule the corrupt behaviour tend to be decrease since there are restriction by required the company or the administrative of government to present the report on the funds use for country development. However, it is impossible to curb the corruption until corruption free because a small amount of bribery transaction still can be conducted and is easily to be covered up the corrupt behaviour. In addition, Mendonca and Fonseca (2012) state that traditional argument that an increase in

rule of law within the countries represents a good strategy to curbing against corruption.

1.2 Problem Statement

It is generally believed that the corruptions will weakening the public confidence toward government decision making. In the recent year, CNSNews has conducted a poll of gathering public information on the public confidence toward the government decision making and the public view toward the future of country in Mexico. However most of the civil responds that they are losing confidence toward the government decision making since the government itself conduct the corruption behaviour and they felt that the country is heading toward a danger situation (Browne, 2016). A recent study by Clausen, Kraay, and Nyiri (2011) shows that there is a links between corruption and confidence in public institutions. The research measures the latter using the question in Gallup World Poll (GWP) where it asks the respondents about the public confidence in a judicial system and national government. In turn the empirical shows that corruption and confidence in institutions are highly significant.

On top of this, the issue of corruption has turn into one kind of global phenomenon where the bribery environment amidst millions of hungry people. The Asian Legal Resource Centre (ALRC) has revealed that poor governance and corruption in major South Asian nations- India, Bangladesh and Nepal- is leading to widespread hunger in the regions. Based on the recent studies by UN Food and Agriculture Organization, they estimated that two-thirds of the total population in the world are suffered from starvation where 12.9 per cent of the undernourished population contribute from developing countries. From the statistic, it clearly shows that the undernourished lead to 45 per cent of the deaths and this shows a mirror image in developing countries where the corruption issues are highly presented (Food and Agriculture Organization, 2012).

Furthermore, it can be observed that the role of press freedom has been weakening nowadays. By looking at the cases of Malaysia and Maldives, both countries' press media sector had been restricted from broadcasting corruption issues by the government. The government authorities in Malaysia and Maldives have act in suspending the local newspaper office license and raided a local newspaper office after the local journalists broadcast a new that claims the president corrupt behavior (Jason, 2015). Few hours later after the news was posted online, the police officer raided the newspaper administrative office in the capital and they spent 15minutes searching its bureau, but left without confiscating anything. After the raid, Maldives release a statement, which claim that the government had receive a complaint about the documentary and warning those local journalist who had broadcast the news were liable for defamation (Safi & Jackson , 2016). As result, those local journalists who involve with the documentary had been warned and some had been jail under defamation laws.

Since its appearance in 1990s, the internet has grown immensely (Andersen et al. 2011, Garcia-Murillo 2010). This creates opportunities and threat on press freedom. On one hand, internet facilitates the flow of information and people can easily access and informed. According to Pew research, 44% percent of Americans now use Facebook as their primary source of news. In other words, internet access and freedom makes it easier for the populace to put pressure on the government. Furthermore, people have the opportunities to anonymously participate in online activities and report corruption (Garcia-Murillo, 2010).

With the internet expansion, it brings treat toward the press freedom where the government may takes action to restrict the online new broadcasted since everyone can be posted online and some sources of information might not be accurate or harm the position of government. In other word, the government acts as a role to balance the society and responsible to protect against the press. However, in reality it shows the other way round that the authority actually restricts the press freedom from reporting. For example The President Nursultan Nazarbayev had increase the penalty for defamation which is prison terms from 3 year to 10 year in prison. The political trick to attack press freedom make media hard to proceed as the increase in internet surveillance, change in prison period

law and violence or terrorism action not only risk on their own life but also their family.

1.3 Objectives of Study

1.3.1 General Objective

The main purpose of this study is to investigate the relationship between corruption and press freedom. The conduction of this study may provide the valuable information about the essential role of press freedom in a country as an indispensable indicator to influence the level of corruption.

1.3.2 Specific Objective

- (1) to examine the contribution of press freedom toward corruption
- (2) to investigate whether the rule of law is a mechanism for press freedom to influence the level of corruption
- (3) to examine the intensity of rule of law in different background of countries on the impact of corruption

1.4 Research Question of the Study

The study has formed a few research questions as below:

- (1) Does press freedom provides contributions toward the corruption level in a country?

- (2) Does the rule of law is a mechanism for press freedom to influence the level of corruption?
- (3) Which of the different background of countries has the most intensity of rule of law on the impact of corruption?

1.5 Hypothesis of Study

The study also presented a few hypotheses. The hypothesis is:

- (1) There is an inverse relationship between corruption and press freedom which mean that when there is more press freedom in the society, the level of corruption will be declined.
- (2) Press freedom has the condition on rule of law which indicates that rule of law plays an important role in presenting the press freedom against the corruption.
- (3) The developed country has the most intensity of rule of law combining with press freedom on the impact of corruption among the three different backgrounds.

1.6 Significance of Study

In the previous research that had been done by the other researchers, their empirical research shows lack of statistical and realistic evidence as it done solely based on the common determinants and omitted the key determinants in the investigation of corruption. Most research studied on the relationship between corruption and press freedom by one sided focus on the press freedom may bring misleading result to the readers and the researchers itself. For this reason, some modifications are made in this study by including the key determinants that are

ignored or forgotten by the previous researcher. In addition, the study collects the data for 95 countries based on the data availability and also transmits the decisive information about the press freedom and rules of law of a country that impact on the corruption level. By including the investigation toward the rule of law, this study able to fill up the research gap that the previous researchers fail to taken into the account to study on the conditionally effect on the rule of law toward the press freedom. With the traditional way of study, it is believe that with the rule of law itself can lower down the corruption incident in a country. However, as the time passed by the mind set and behavioural of the new generation has change and their react on the corruption is seen as an important element to influence the level of corruption. Therefore, this study proposed the rule of law by combining with the press freedom to investigate the joint effect toward corruption.

1.7 Chapter Layout

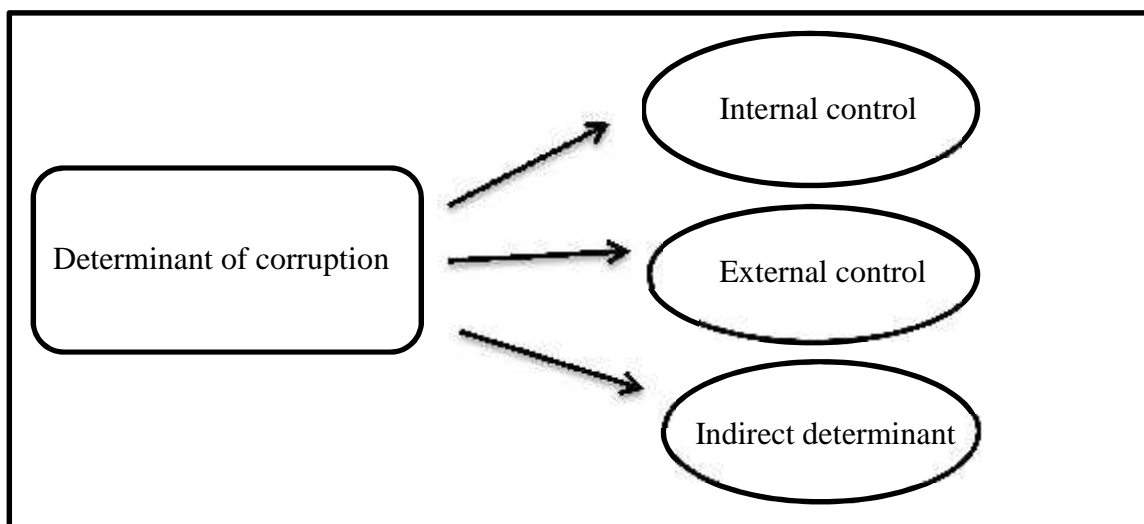
The study basically comprises of five sections: Chapter 1 presents an introduction of study including the background of study, problem statement, objectives, research questions, hypotheses, and significance of the study. Chapter 2 presents the literature review which reviews some theories lie behind the study which shows the previous researchers' finding between the relationship of corruption and the control variables. Chapter 3 discusses the proposed methodology of the study, data collection, namely its 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. Lastly chapter 5 files a conclusion with some policy implications, study's limitations and recommendations for future researchers.

CHAPTER 2: LITERATURE REVIEW

2.1 Determinant of Corruption

In the past literatures, there are many empirical studies were found that corruption is significant affected by several factors such as GDP Ata and Arvas (2011), Saha and Gounder (2007) and Salih (2013), trade openness Ades and Tella (1999), Graeff and Mehlkop (2002), Salih (2013), urban population Churchill et al (2013) and Ahrend (2002), press freedom and rule of law. Generally, as shown in Figure 2.1, the determinant is explaining the incidents of corruption can be categorized into three distinct ways. First and foremost, we can centralize on the *role of internal control* for the system and incentives which control the dishonest action within the bureaucracy. Secondly, we also centralize on *role of external control* in investigating corruption as well. Third, there are some *indirect factors* affecting the corruption. For example, culture or rents level.

Figure 2.1 Determinants of Corruption



Source: Brunetti & Weder (2001)

Internal control consist the entire system and incentive in controlling the corruption problems in bureaucracy. When the administrative environment is lack of strict capability of performance, the corruption level in the field will tends to become higher. Rauch and Evans (2000) emphasize on meritocracy and nepotism is playing an important role for internal control, especially is in the process of recruitment and promotion in bureaucracy. The chances of internal control by collusion among bureaucrats will decline when there is less of nepotism. Rauch and Evans (2000) show that the index of meritocratic recruitment and promotion is significantly affecting the corruption level in less developed countries. In a similar literature of study, Rijkeghem and Weder (2001) argue that the bureaucrats with low salary in public sectors are more tend to accept bribes as compare to the salary in the private sector. According to Rijkeghem and Weder (2001) research results, the hypothesis testing result was showed that the lower the salary of public sector, the higher the corruption level in a less developed country.

External control consist the corruption in an individuals or organizations involved in corruption issue outside the administration (Brunetti and Weder, 2001). For example, the judiciary power in perform in a working system of check and balance. The corrupt bureaucrats can be easily sued to drop the hidden rewards of corruption in a court system. In a less developed country, check and balances of the society can be act as external controller. Next, Rahman (1986) argued that it is hard to analysis the influence of external corruption because the measurements on the external control mechanisms are limited when the cross-country method was used. In the same time, Ades and Tella (1999) argued that press freedom has potential to the external control of corruption.

Why do several countries misuse public office or money for private gain more frequently and for larger payoffs than officials in others? These were all about the countries corruption. Based on the study by Graeff and Mehlkop (2002), the corruption will be reducing if government does not intervene the business activities and does not impose any tariff. Which mean the lesser the government manipulates on business activities, the lesser the problem of corruption. Theoretically, corruption can be discovered in several characteristics of countries' political, economic and social system. Treisman (2000) argue that the countries' officials can be construed as balancing the expected cost of a corrupt act, where

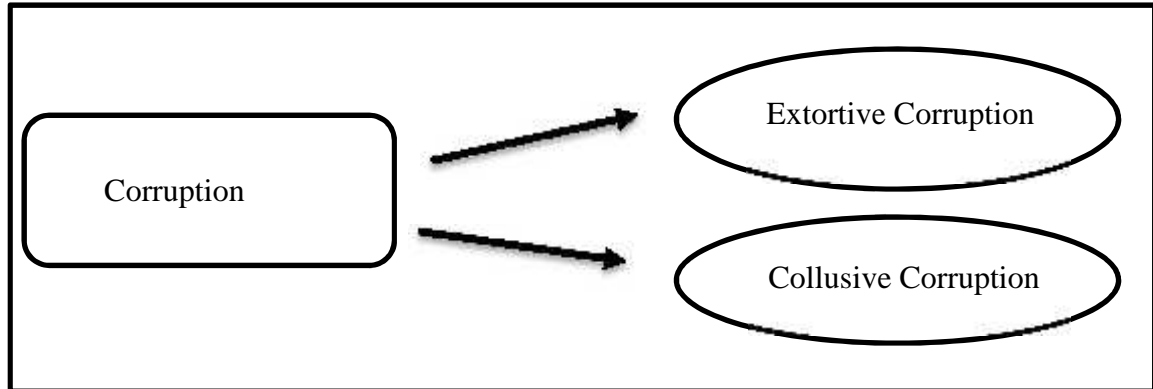
individuals weigh the relative costs and benefits of illegal acts to make a rational choice. Benefits are about the power, position and money, while the most obvious cost is the risk of facing exposure and punishment.

The percentage of getting exposure of corruption could depend on the effectiveness of press freedom of country. For several reasons, the risk of discover is larger when there is a free press on media, media able to deliver the impartial and sufficient information for citizens an independently scrutinizes holders of political power (Norris, 2004). The availability of information is rely on the freedom enjoyed by the access to media content of citizen and it was importance underlying assumptions and crucial determinants for the efficiency of economic markets. A free press can improve the knowledge of people about corruption and the negative effect of corruption brings. Kalenborn and Lessmann (2012) also found the same result which is press freedom helps to improve the percentage of reduction of corrupt behavior and reduce the expected gain from corruption. This is because press freedom can assist to decrease the information asymmetries in the principal and agent framework. Citizens see corruption had a greater problem they will more likely to report such behaviors.

Indirect determinants of corruption consist of culture and distortions level in the economy. Lee (1986) suggested that the culture of bureaucratic elitism might cause to a disassociation of bureaucracy with the rest of community and breed corruption. Mauro (1995) stated that there is a positive finding result between ethno linguistic fractionalization and corruption. Furthermore, the indirect determinants also included the distortive policies. For instance, Tanzi (1994) stated government involve in free markets generate rents and it increased sharply in 1804. Kaufman (1997) found a strong relationship between regulatory discretion and corruption in developing countries. Besides, Ades and Tella (1999) prove that the higher the competition in cross-country, the lesser the level of corruption.

2.2 Role of Media Curbing Corruption

Figure 2.2: Which type of corruption can be tackle by Press Freedom?



Source: Brunetti & Weder (2001)

Based on many empirical evidence, it shows that press freedom can be used as one of the indicator to reduce corruption level. According to Authors Ahrend (2002), Brunetti and Weder (2001), Charron (2008), Daniels (2011), Becker et al (2013), Starke et al (2016), Norris (2004), Chowdhury(2004), Gardiner (2002), Färdigh et al (2011), Freille et al (2007), Bolsius (2012), Färdigh (2007), Camaj (2013), Francken et al (2005), Churchill et al (2013), Srivastava (2016), Stapenhurst (2000), Charron (2008) and Kalenborn and Lessmann (2012), these authors have found the same finding results between the corruption and press freedom which is they are negatively affecting each other.

Extortive corruption is the discretionary power where a service been rejected or postponed by government official so that government official can collect bribe as rents from private agents. For instance, government officials have the right in to approve a new launching project from private agents. According Hindricks et al (1999) stated that tax evasion one kind the serious form of extortive corruption. Additionally, based on the study case of Klitgaard (1988), it provided and described many schemes were used by dishonest bureaucrats in order to exact tax payers in Philippine tax system. Such as, tax inspector in Philippine will impose a very high amount of payment on the tax payer since the

legal framework in Philippine was expensive and takes time for appeal and approval. Hence, the tax inspectors could take this advantage in this scenario.

The only option of tax payers when they are facing such extort, they will rather paying the bribe or complaining to judiciary by using either internal or external control. In the same time, private agents playing an important role in prevent corruption by fighting extortion because they have a very powerful incentive to against extortion corruption. Nevertheless, tax payers may rather surrender to the extortion when the formal internal and external control mechanisms are not well-functioning. This is because when it is not functioning well, the costs of appealing will tend to be very expensive. In the same time, the cost to prevent extortive corruption will decrease when there was a press freedom on constitutes as a new channel of external control. When there is a free press, the firm can show the behaviour of bureaucrat to reporters and reporters tends to increase the budget for the bureaucrat since there is a higher percentage of being discovered and punished. Therefore, for the extortive corruption the press, the platform for expressing complaints should be provided in order to strength the reaction possibilities of the private sectors.

Collusive corruption is the incentives which different from extortion, whereby the official hold the discretionary right in implement the laws and regulations. In addition, collusive corruption is widely speared especially on tax evasion. For example, the customs inspectors have information on the firm's import value. Next, the importers could deal and pay a certain amount of payment for the firm's management in order to decrease or escape for a higher tax payment. The whole corrupt process is difficult to be discovered by other official and the firms have no incentive to involve the corruption, unless it has good internal control systems to detect this illegal activity. The example given by Klitgaard (1988) which is the tax system in Philippine and the corruption is known as *arreglo* (agreement). The tax payers would choose to pay for a return to understated income or too many deduction and *arreglo* will be used when tax collector found out some mistakes in the transaction. Afterwards, tax payers would pay 50% as the taxes required and 33% will be paid as briber for tax collectors and the remaining amount which is 17% will be kept by tax payers.

We notice that collusive corruption is harder to fight as compared to extortive corruption since the arrangements brings beneficial for both parties whereby the bureaucrat and firms will try to do everything to bury it. In opposite site, extortive corruption can be reduced this illegal action by using the power of private agent. Hence, press freedom might be the most effective way to control and against the collusive corruption. Hence, how does the press freedom has an impact on corruption, based on many previous empirical evidences of Ahrend (2002), Brunetti and Weder (2001), Charron (2008), Daniels (2011), Becker et al (2013), Starke et al (2016), Norris (2004), Chowdhury(2004), Gardiner (2002), Färdigh et al (2011), Freille et al (2007), Bolsius (2012), Färdigh (2007), Camaj (2013), Francken et al (2005), Churchill et al (2013), Srivastava (2016), Stapenhurst (2000), Charron (2008) and Kalenborn and Lessmann (2012), had proven that there is an inverse relationship between press freedom and corruption level, which means that the higher the press freedom, the lower the corruption level.

According to previous empirical studies, a free in press will leads to reduction in corruption because public will become more knowledgeable and it brings the political pressures to politicians. Firstly, according to Ahrend (2002) has provided strong evidence on increasing the press freedom level is an important indirect mechanism for fighting corruption level. Since when there is a free in speech and media will leads to people became more knowledgeable and more educated which will affect the corruption level. Brunetti and Weder (2001) had classified on press freedom is a powerful and important human right to controls against the corruption whereby conclude that where the media is reasonably given free from restriction controlling their activity, the corruption levels within the countries tend to be lower. Thus, when there is a free in press, people will become more knowledgeable and more education, which they can stand out on their point of view to against corruption.

Additionally, press freedom brings political pressure to politicians because when there is a free on media, it causes the political pressures which have a slightly strong impact on corruption (Charron, 2008). Daniels (2011) states that freedom on media has strong relation to affect corruption level because press freedoms are essentially linked to an importance towards human rights and

controlling against the government malfeasance. In the same time, it is also effectively in uncovering the trespassing government official. Becker et al (2013) and Starke et al (2016) argued that the press freedom on media could help citizens to create awareness about corruption issues and citizens able to access an institution of check and balances by using mass media. Although it is hard to prove that freedom of media can be strong enough to against corruption, but it can be proven to reduce corruption level since it brings the political pressures. In the same time, mass media act as watchdogs when there is a free, since public able to observe the government action which it will hold political decision makers accountable for their action (Norris, 2004).

Chowdhury (2004) emphasize that press freedom on media brings voters' state of knowledge while voters in a democracy in turn punish corrupt politicians by ousting them from public offices. Whereby, voters who care about corruption may be more likely to elect officials who consider corruption is an issue which officials will offer bribes or will abide by the requirement law. So, understand public opinion about corruption issue will provide a basic for effective law enforcement efforts and these effects will contribute to corruption curbing the ability of news media Gardiner (2002). Lastly, citizen can receive and gather additional information through social media and make intelligent choices especially in their voting decision (Färdigh et al, 2011). Therefore, elected politicians respond to the voters by reducing corruption.

However, there include the incentives for corrupt government to limit the press freedom due to the refuse the suspicion that there could a potential endogeneity problem which involved with the respect to the causality between press freedom and corruption. Other than that with the help of high degree of press freedom, media can assist prosecutorial institutions by investigating and reporting the occurrences of having corruption and it will leads to investigations by the official bodies. Besides, press freedom creates the awareness about corruption of people. Where, press freedom could release the wrong campaigns and accusation against the government. Furthermore, corruption of a country state which capture the public attention and increase the revenue for a certain media firm. In another words, some media firm tend to release the wrong information in order to capture public attention and increase individual revenue. The reason is

because media has ability to reaches a huge amount of population easily and it brings the pressure for those parties whom involves in this illegal activities (Stapenhurst, 2000).

Free press is important to reduce this corruption because independent journalists have power to look into any abnormal action and detecting corruption actions. Furthermore, a free on press may increase the incentives for some journalists to other journalists for certain purpose. Such as discovered arrangements and publicize this. In another word, some journalists involve this corruption investigation is for the purpose of fame and revenue. Thus, a free on journalism and publishing will be hard to form an effective cartel which possessed to all journalists.

2.3 Tackle Corruption: Enforcing the Rule of Law

In past literature, there has many empirical studies were found that press freedom impact on corruption. However, we has no enough evidence to prove that press freedom was strong enough to reduce the corruption level by itself. According to the data we collected, we found that Jamaica is a country which enjoys a very high level in free press; however, there is still a high level of corruption in their country. Thus, we suspect this incidence will occurs due to the rule of law is weak in Jamaica since the ranking is 44.32 which below than the average of 50. Therefore, we included rule of law as our independent variable in order to us to improve the accuracy and accomplish the objective.

Based on the studies of Mendonca and Fonseca (2012) and MacDonald and Majeed (2011), both authors have found that there is a significant relationship between the rule of law and corruption. In the same time, both authors the same finding result which is negative relationship, which is the stronger the rule of law, the lower the corruption level. In another mean, well structure legal system is playing an important role in order to reduce corruption level in a country.

According to the empirical study of Ali and Isse (2003), the author argues that corruption level is relying on the rule of law. Corruption officials are rational welfare maximizers, which they have the ability to gain from corruption against its cost. The reason of well structure law will reduce the corruption level is because when corrupt officials got caught they will facing a cost which is being lay-off or jail-time. 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 for reducing the corruption. Therefore, we included the rule of law as one of the independent variable and complementing together with press freedom to accomplish our objectives.

2.4 Finding Research Gap

Based on our literature study, most of the study focusing on press freedom considered one of the important determinants for external control mechanism on corruption. For instance, Färdigh et al (2011), Freille et al (2007), Daniels (2011), Becker et al (2013), Chowdhury (2004), Bolsius (2012), Ahrend (2002), Brunetti and Weder (2001), Färdigh (2007) included press freedom as one of the variable, however, they do not include the rule of law in their model. Most of the study reselected the rule of law where discuss how media can curb corruption. In this study, we attempted to measure the role of press freedom on corruption condition on the rule of law. In hypothesis, the previous study is only measure on the partial effect on press freedom on corruption rather than total effect.

Based on our result, it shows that the rule of law is an important variable that cannot be omitted. Press freedom alone was not strong enough to affect the corruption price index, however by including the rule of law together with press freedom, the result shows a high significant effect on corruption price index. For example Jamaica enjoys a very high press freedom but their legal system was not well structure, as result their corruption price index was low.

As conclusion, press freedom can assist to reduce and fight for extortive corruption as well as fight with collusive corruption where it beneficial both bureaucrats and clients in the corruption action. In addition, role of press freedom curbing corruption will serve to increase citizen accessibility information which will cause more difficult and fear for the public servants and politician servants to cover up it or to get away for the corrupt behavior.

CHAPTER 3: METHODOLOGY

3.1 Overview

To investigate the role of press freedom on curbing corruption, we considered the use of panel data for 95 countries over the years of 2005 to 2014 due to the limitation of data availability for data on press freedom. By combining a pool of 95 countries over 10 years of time, we believed that this can increase the efficient in our estimation as believe that use panel data can increase the degree of freedom, and sample variability. Furthermore, this can also reduce the possibility of multicollinearity problem as in the case of pure time series or pure cross sectional regression (Baltagi, 2002).

In addition, recent literature suggested that the unit root testing as in time series regression, tend to suffer from low power due to the distribution of small sample size. Panel unit root test, on the other hand, is more powerful due to large sample size (Levin et al, 2002). We consider 3 different panel data models in this study, namely Pooled ordinary lease square (POLS), Fixed effect model (FEM), and Random effect model (REM). Due to the possibility of heteroscedasticity and auto correlation problem in this study, we consider the robust standard error in our estimated results.

3.2 Theoretical Framework

This study develops a basic model included relevant variables to reveal how all the variables affecting on corruption. According to Churchill et al (2013), Tavares (2002), Saha and Gounder (2007), Ata and Arvas (2011), Salih (2013), Graeff and Mehlkop (2003), Ahrend (2002), Chowdhury (2004), Daniels (2011),

Norris (2004), Fardigh (2007), Freille et al (2007), Becker et al (2013), Bolsius (2012), Brunetti and Weder(2003), all of the independent variables that we chose are depends on existing studies by these authors is because we found out that most of the authors are commonly using gross domestic product, urban population, trade openness, press freedom and rule of law as independent variables in basic model. Thus, gross domestic product, urban population, trade openness, press freedom and rule of law have been used as our independent variables and Corruption Perception Index (CPI) has been used as dependent variables. The functional form of corruption is constructed in the simplest way as below:

$$CPI = f(GDP, POP, TRADE, PF, ROL)$$

Where CPI stands for Corruption Perception Index (Score), GDP stands for Gross Domestic Product (Constant US\$), POP stands for Urban Population (%), TRADE stands for trade openness (%), PF stands for press freedom (Ranking) and ROL stands for rule of law (Ranking). Table 3.1 show the expected sign and explanation of the proxies used in the model.

Table 3.1: Expected Sign and Explanation of Indicators

Indicators	Expected Sign	Explanation
GDP	Positive (+)	The higher the GDP, the higher the score of CPI.
POP	Positive (+)	The more of population in urban areas, the higher the score of CPI.
TRADE	Positive (+)	The number of trade increases, the higher score of CPI.
PF	Negative (-)	Level of freedom on media increase, level of corruption decrease.
ROL	Positive (+)	Increasing of rule of law fight against corruption, hence the CPI score will increase.

*Notes: GDP is Gross Domestic Product, POP is Urban Population, TRADE is Trade Openness, PF is refer to Press Freedom, ROL is Rule of Law

Independent variables in this model are Gross Domestic Product (GDP), Urban Population (POP), Trade Openness (TRADE), Press Freedom (PF) and

Rules of Law (ROL). In this research, PF is the main indicators of affecting the CPI. The expected sign of this indicator is negative which implies that the higher scores in press freedom, the lower the score of corruption perception index. In short, it means that level of corruption will decrease when level of freedom on media increase. Based on the Cost and Benefit theory, individuals weigh the relative costs and benefits of illegal act to make a rational choice. According to Norris (2006), the risk of exposure and getting caught is assumed to be larger when there is free press on media, because free press is able to provide impartial and sufficient information to citizens to become knowledgeable in political knowledge to make rational choice regarding to their voting.

Gross Domestic Product (GDP) is one of the important indicators in model. There is expected positive sign between GDP and CPI whereby increase in percentage of GDP will cause additional score of CPI. Thus, level of corruption will decrease when percentage of GDP increase. According to the study by Blackburn, Bose & Haque (2005), the country with higher percentage of GDP may bring willingness to combat corruption which means it will expose to greater risk of getting caught in a nation. Since high GDP country mostly refer to developed country, which having a well structural rules and regulation. Thus, business or government who will try to corrupt in these countries would face a higher risk compare to those under developing or low GDP country.

Other than that, urban Population (POP) is the total number of persons inhabiting in a country. The expected sign between urban population and corruption perception index is positive means the more of population in urban areas, the higher score of CPI. In short, a nation will be less corrupted with more population in urban areas. Based on the study by Churchill et al, (2013), urban citizens tends to be more involve in civic society activities and well educated to balance the cost and benefit of illegal act. For example, with high urban population mean higher educational level compare to rural area. Thus the people would be more rational and informative to the reduce corruption. With higher educational level, they would seek for the truth and knowing the right or wrong toward the government act.

Besides, the expected sign of Trade Openness (TRADE) and Corruption Perception Index (CPI) is positive which indicates that higher percentage of trade openness will causes higher scores of CPI. Hence, a nation will be less corrupted when there is increase in number of trade. With trade openness, it reduces the domestic trade and increase the number of foreign trade. Thus the trade would be more strictly due to the trade policies that impose by government. So the trade policy will act as a high barrier and causing the corruption behaviour to be reduced. Since trade policy increase the accountability and monitoring of its bureaucracy. As result it was a cost for those people who try to corrupt. For example, a multinational company who involve trade with the other foreign company will tend to less corrupted. Since all trading or transaction process will be more systematic and transparency due to the rules and regulation that set by company, country or government.

Rule of Law (ROL) is the restriction and established laws in nation. In this study, the expected sign of ROL is positive with CPI. It implies that increasing in rule of law will leads nation in less corrupted. According to Mendonca etal (2012), the country with high rule of law is means that no one is above the laws which imply that risk of getting caught will be higher. For example, strict rule of law in nation will control level of corruption and causes public politicians to avoid in action of corrupt and prevent the risk to get caught.

3.3 Empirical Model

The empirical model is constructed as below:

$$CPI_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 POP_{it} + \beta_3 TRADE_{it} + \beta_4 PF_{it} + \beta_5 ROL_{it} + \beta_6 (ROL_{it} \times PF_{it}) + \mu_{it} \quad (1)$$

where, i stands for i th cross-sectional unit, t stands for t th time period and μ stands for error term. The CPI represent Corruption Perception Index (Score), GDP represent Gross Domestic Product (Constant US\$), POP represent Urban

Population (%), TRADE represent Trade Openness (% of GDP), PF represent Press Freedom (Ranking), ROL represent rule of law (Ranking), and ROL×PF represent Press Freedom is a condition of Rule of Law.

From the above variables, we have developed some hypothesis in order for us to examine our research objective. The hypothesis development is based on the relationship between independent and dependent variable. If the null hypothesis been rejected, which mean the relationship been rejected. In contrast, if the relationship does exist, null hypothesis will not be rejected. Firstly, to test whether the press freedom is negatively related to corruption level, we formulated a null hypothesis with β_4 less than or equal to 0 and alternative hypothesis with more than 0. Secondly, to test whether the rule of law is positively related to corruption level, we derived a null hypothesis with β_5 is more than and equal to 0 and an alternative hypothesis with β_5 less than 0. Lastly, to investigate the rule of law is a mechanism for press freedom to influence the level of corruption, we derived null hypothesis with β_6 is equal to 0 and alternative hypothesis with β_6 is unequal to 0.

In order to achieve the objective 1, we can refer to β_4 to examine the impact and contribution of press freedom towards the corruption. Besides, instead of looking at the partial and individual statistically effect toward the investigation of corruption, this study aims to draw out the joint effect of the press freedom and rule of law in a more penetrate deep level in order to capture the marginal effect of press freedom on corruption. In order to achieve our objective 2, we can refer to β_4 and β_6 to examine the impacts of the conditional effect of rule of law towards the corruption. To capture the total effect of the press freedom on corruption, the marginal effect can be captured by the following formula:

$$\frac{\partial}{\partial} = \beta_4 + \beta_6 \times r \quad \text{or} \quad \text{lag} \quad (2)$$

Based on this calculation, we able to know their joint significance or the marginal effect of press freedom on corruption, rather than only looking at the individual statistical significance. So this model claim the effect of press freedom on corruption is depend on the mean value of conditioning variable rule of law.

Table 3.2: 95 sample countries into 3 difference development categories

Developed Countries		Developing Countries		Underdeveloped countries
Singapore	Switzerland	South Africa	Indonesia	Rawanda
Spain	Denmark	Colombia	Costa Rica	Niger
Netherlands	Korea Republic	Brazil	Romania	Uganda
New Zealand	Norway	Malaysia	Mongolia	Senegal
Hungary	Ireland	Mexico	Panama	Mozambique
Italy	Canada	Venezuela	Tunisia	Chad
United Kingdom	Luxembourg	Argentina	Egypt	Bulgaria
Sweden	Germany	Thailand	Peru	Tanzania
Iceland	Australia	Pakistan	Gabon	Haiti
USA	Uruguay	Turkey	Moldova	Benin
Israel	Austria	India	Jordan	Gambia
Qatar	Lithuania	China	Mauritius	Nepal
France	Chile	Philippines	Namibia	Mali
Slovenia	Belgium	Belarus	Tunisia	Madagascar
Estronia	Czech Republic	Ecuador	Georgia	
Japan	Poland	Lebanon	Guyana	
Malta	Portugal	Russia	Nigeria	
Cyprus	Latvia	Kenya	Iran	
Kuwait	Jamaica	Irap	Sudan	
Saudi Arabia	Oman			
Albania	Bahrain			
Greece				

*Notes: Countries are categories based on their development categories following level of gross national income, World Bank standard

In order to achieve our objective 3, we had divides all the 95 sample country in 3 type of development categories which are developed, developing and underdeveloped country. But how we divide it into developed, developing and underdeveloped country? We divide it base on the World Bank standard, which a developed country is the one who enjoys high level of Gross National Income

(GNI) or in another word we divide it base on their level of income. The purpose we conduct this test is to examine in which of the development stages has intensity of rule of law combining with press freedom on impacts of corruption.

The reason we conduct this test is based on the characteristic of those country. For example the rule of law in underdeveloped country is much lower compare to developed country. Therefore we suspect that business in the particular country will more likely to participate in corrupt practices, for instance they will more likely to pay off bribes to avoid taxes or trying to make another financial profit (Todd, 2014).

3.4 Model Estimation

3.4.1 Panel Unit Root Test

Panel unit root test was use to examine the stationarity of the variable in the model. It is importance to have stationary variables due to avoid the spurious regressions. For instance, if two variables in a same regression model moving over the time, one of the variables could have a high R^2 even if they are totally unrelated. So when the variables in the regression model showing non-stationary or contain unit root, the standard assumptions for asymptotic analysis will be invalid. Or in a simple term, the “t-ratios” does not follow a t-distribution, thus the hypothesis testing result cannot be trustable.

To carry out the panel unit root test, we are using Levin, Lin and Chu test (LLC) panel unit root test. The auxiliary regression for the panel unit root is based on augmented dickey fuller regression as in time series regression where:

$$\Delta Y_{it} = \mu + \beta + \delta Y_{t-1} + \sum_{i=1}^k \alpha_i \Delta Y_{t-1} + \varepsilon_{it} \quad (3)$$

$i = 1, 2, 3, \dots, 95$

$t = 2005, 2006, \dots, 2014$

3.4.2 Levin, Lin, and Chu Test

LLC claims that individual unit root test will have a limited power against the alternative hypothesis. The limited power means the ability to reject the null hypothesis when it is false.

Ho: Panels contain unit roots

H1: Panels are stationary

So the LLC suggest a more powerful panel unit root test. LLC test assume that LLC test are in autoregression (AR) coefficients dynamics and does not consists of heterogeneity for panel series, which mean it allow either time effects and individual effects or linear trend. Besides, error term structure is also assumed to be contain homogeneous of first autoregressive model which indicates that series integrated at first order I(1) are cointegrated (Levin, 2002).

3.4.3 Pooled OLS, Fixed Effect Model and Random Effect Model

As above mentioned, there were 95 countries data was collected from the years of 2005 until 2014, thus, pooled ordinary least square (OLS), fixed effect model (FEM) and random effect model (REM) are the methods which we can used to achieve our objectives.

$$\text{Pooled Ordinary Least Square (OLS): } Y_{it} = \alpha + \beta X_{it} + \mu_{it} \quad (4)$$

$$\text{Fixed Effect Model (FEM): } Y_{it} = \alpha_i + \beta X_{it} + \mu_{it} \quad (5)$$

$$\text{Random Effect Model (REM): } Y_{it} = \alpha + \beta X_{it} + [\eta_i + \mu_{it}] \quad (6)$$

*where X included GDP, POP, TRADE, PF, ROL; Y refer to CPI

First and Foremost, we have carried out two hypotheses testing which is Poolability F test and Breush and Pagan Lagrange Multiplier test in order to continue with the following steps. In statistics, Poolability F test is used for comparing the goodness of fit between two models which is null model and alternative model to determine which model is offers a better fit for sample data. In poolability F test, null hypothesis suggested that Pooled OLS is preferable, while alternative hypothesis is fixed effect model is preferable. The formula of Poolability F test is as below:

$$F = \frac{(R_{F1}^2 - R_P^2) / (K_{F1} - K_P)}{(\mathbf{1} - R_{F1}^2) / [N - (K_{F1} + \mathbf{1})]} \quad (7)$$

Furthermore, Breush and Pagan Lagrange Multiplier test has been applied in order to differentiated either Pooled OLS is preferable or Random Effect Model (REM) is preferable. Thus, the formula of Breush and Pagan Lagrange Multiplier is constructed as below,

$$LM = \frac{\left(\sum_{i=1}^N T_i\right)^2}{2\left(\sum_{i=1}^N T_i(T_i - 1)\right)} \left[\frac{\sum_{i=1}^N \left(\sum_{t=1}^{T_i} \hat{\epsilon}_{it}\right)^2}{\sum_{i=1}^N \sum_{t=1}^{T_i} \hat{\epsilon}_{it}^2} - 1 \right]^2 \sim t^2(1) \quad (8)$$

Based on the results, both Poolability F test and Breush and Pagan Lagrange Multiplier test were rejected the null hypothesis which is Pooled OLS is not suitable to apply for the investigation in this research. The reason of Pooled OLS was not suggested for the estimation purpose by comparing to Fixed Effect Model (FEM) and Random Effect Model (REM). Although Pooled OLS is the simplest method in regression but it will have some mistakes on capturing the results of finding since out data

is collected in a form of unbalance panel data. Firstly, pooled OLS does not include the correlation in the variables. Since, our variables are in a stationary form which means that our variable is not interdependent across the time or countries.

Moreover, the problem of heteroscedasticity may be occurs in this research if we conduct Pooled OLS as an estimation, this is because our data collected has different variance. One of the reason of heteroscedasticity is taking place in the model is because we are using panel data which consists of 95 cross-sectional and 10 time-series. Besides, when panel data was collected, the regression might has heteroscedasticity and auto-correlation problem by using pooled OLS even our regression start with homoscedasticity and no auto-correlation problem. When there is a heteroscedasticity problem, the value of the estimated parameter in model will tend to be biased in coefficient or parameter estimators. When the coefficient is not unbiased, it causing the standard deviation in the model become inefficient and inconsistent. In the same time, the hypothesis testing results become invalid due to biased, inefficient and inconsistent. Whereby, the invalid result will leads to a misleading and spurious results. Hence, the consequence of heteroscedasticity in a regression model will leads to invalid and misleading results. Thus, Pooled OLS is not preferable to be used since we use panel data which included a wide observation.

Other than Pooled OLS, there are Fixed Effect Model (FEM) and Random Effect Model (REM) can be applied in our estimation purpose. This is because our regression has the different value in each intercepts and constant slope. Besides, our model is no time invariant because it does not has the time effect. Therefore, to choose which methods is the best for the estimation purpose, we have conducted Hausman Test. The formula of hausman test can be derived as below:

$$H = \left(\hat{\beta}_{RE} - \hat{\beta}_{FE} \right)' \left[\text{Var}(\hat{\beta}_{RE}) - \text{Var}(\hat{\beta}_{FE}) \right]^{-1} \left(\hat{\beta}_{RE} - \hat{\beta}_{FE} \right) \quad (9)$$

$\sim \chi^2(\#_{FE}), \text{ provided } \#_{FE} = \#_{RE} \text{ (no intercept)}$

Where we derived the null hypothesis with Random Effect Model (REM) is preferable and the alternative hypothesis with Fixed Effect Model (FEM) is preferable. From our results, we notice that Fixed Effect Model (FEM) is preferable. Since our data was collected in a form of cross-sectional and time-series this means that each country has non-identical background and characteristic. Hence, Fixed Effect Model (FEM) is much suitable for the estimation purpose in this paper because the intercept in Fixed Effect Model (FEM) is not constant which mean there is the different value for each intercept due to different countries data was collected.

3.5 Sources of Data

Table 3.3: Summary of measurement and sources for each variable

Variables	Measurement	Sources
CPI	Score (0 high corrupt-10 least corrupt)	Transparency International
GDP	Constant US\$	World Bank
POP	Percentage of total population	World Bank
TRADE	Percentage of GDP	World Bank
PF	Ranking (0 very free-100 least free)	Freedom House
ROL	Ranking (0 weak-100 strong)	World Bank

*Notes: GDP is Gross Domestic Product, POP is Urban Population, TRADE is trade openness, PF is refer to Press Freedom, ROL is Rule of Law

First, based on the previously studies, we collected the data of Corruption Perception Index (CPI) from the The Global Coalition against Corruption-Transparency International which defined the corruption as the misuse of entrusted power for private gains. According to the Transparency International, the Corruption Perception Index (CPI) is scored between 0 to10 scales which

mean that the low scale represent high level of corruption and high scales indicate low level of corruption.

Besides, Freedom House is a trustable site which is an independent watchdog organization with the purpose of freedom expression promotion and democracy around the world. By gathering the press freedom data from Freedom House, the press freedom is refer to the freedom of expression of human right and ability to voice out and has been standardized from 0 to 100 whereby 0 represent more freedom and 100 represent less freedom.

However, the remaining data of the four important variables are collected from the World Bank. The definition and measurement of each variable as below:

i. Gross Domestic Product (GDP)

- According to the World Bank, GDP is the sum of gross value added by all resident producers in the economy adding up with any product taxes and minus any subsidies not included in the value of the products. The GDP value is calculated without the deductions for depreciation of manufacture assets or the depletion and degradation of natural resources. Moreover, the value of GDP is measure based on the constant U.S dollar.

ii. Urban Population

- As refer to the data collected from World Bank, the urban population is measure based on percentage (%) and is refer to the people living in urban areas as defined by the national statistical offices.

iii. Merchandise Trade as per GDP

- Merchandise trade is the sum of merchandise exports and imports divided by the value of GDP; measure all in constant U.S dollar.

iv. Rule of law

- Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. However,

the measurement of rule of law is based on the ranking where 0 correspond to lowest rank and 100 correspond to highest rank.

CHAPTER 4: RESULT & DISCUSSION

4.1 Overview

The empirical discuss of the result in this study begins with the summary of descriptive statistic of data among 95 countries from years 2005 to 2014. This follows by the results of panel unit root test and model estimation. Furthermore, the summary of result from this research will be summarizing in the last section.

Table 4.1 Descriptive Statistic for the year 2005-2014

Variable	Obs	Mean	Min.	Max.	Std Dev
CPI (Index)	940	4.8229	1.1	9.7	2.2329
GDP (constant US\$, 100 Billion)	940	6.55	0.0076	161.77	18.2189
POP (% of total)	940	65.0123	13.031	100	22.0802
TRADE (% of GDP)	940	90.386	19.4588	439.657	57.8581
PF (Index)	940	41.94	9	93	22.8679
ROL (Index)	940	58.1537	0.43	100	28.2346

*Notes: CPI is Corruption Perception Index, GDP is Gross Domestic Product, POP is population, TRADE is trade openness, PF is refer to Press Freedom, ROL is Rule of Law

Table 4.1 report the descriptive statistic for the 95 sample countries over the years of 2005 to 2014. The variable for Corruption Perception Index, Freedom of the Press and Rule of Law are in the index form. For Corruption Perception Index is from 0 to 10, while for the Freedom of the Press and Rule of Law is from 0 to 100. Among the 95 countries, Sudan has the lowest CPI score of 1.1 while Iceland has maximum value of corruption perception index for the year 2005 to 2014. Besides, Iceland is the most free press country among 95 countries which is 9 and the worst free press country is Belarus which is at 93 in year 2005 to 2014.

Furthermore, the minimum value of rule of law is 0.43 which is at Venezuela which have lower level of rule of law among 95 countries. In addition, Iceland, Norway, Finland and Denmark have maximum value of rule of law which is at 100 in these ten years.

4.2 Preliminary Test: Result of Unit Root Test

Table 4.2: Levin, Lin and Chu result

Test statistics		
	<u>Levin, Lin and Chu (LLC)</u>	
<u>Level</u>	Individual intercept	Individual intercept & Individual linear trend
CPI	-9.9653***	-15.2343***
GDP	-0.66752	-16.9931***
POPULATION	-0.525	-2.1246**
TRADE	-8.0513***	-16.162***
PRESS_FREEDOM	-11.829***	-16.748***
ROL	-2.3829***	-5.7254***
<u>First Different</u>		
CPI	-19.2733***	-23.9859***
GDP	-19.9684***	-36.8928***
POPULATION	-5.9580***	-22.8328***
TRADE	-19.8453***	-21.1203***
PRESS_FREEDOM	-14.973***	-15.1123***
ROL	-7.9276***	-10.6557***

Note: *Significant at 0.10 significant level, ** Significant at 0.05 significant level, ***Significant at 0.01 significant level

In order to make sure our panel data does not suffer from the unit root problem we carry out the panel unit root test. As shown in table 4.2 the result in

Levin, Lin and Chu (LLC) test, shows that all the variables tested are stationary which mean that the variables do not contain the past effect where it can make our result more reliable and unbiased.

Table 4.3 show the summary result for our panel data model estimation. There are 3 different models using 3 different estimation methods, namely Pooled ordinary least square (OLS) model, Fixed effect model and Random effect model. We use robust standard error for checking the possibility of heteroscedasticity.

Table 4.3: Summary of Results

Variables	Dependent Variable: CPI								
	Model 1			Model 2			MODEL 3		
	POLS	FEM	REM	POLS	FEM	REM	POLS	FEM	REM
GDP	0.5354 (0.0209) ***	2.2434 (0.3300) ***	0.9152 (0.1228)***	0.0833 (0.0277)***	1.7916 (0.3482) ***	0.4008 (0.0896)***	-0.1858 (0.0242)***	1.709 (0.3663)***	0.2568 (0.0791)***
POP	2.5144 (0.00544) ***	1.1722 (0.7349) **	4.0789 (0.3746)***	1.2359 (0.0502)***	1.9949 (0.9770)**	2.3707 (0.2549)***	1.145 (0.0543)***	2.7519 (1.0291)***	2.0372 (0.2404)***
TRADE	1.7297 (0.0912)***	0.4011 (0.1508) ***	0.8441 (0.1781)***	-0.2306 (0.1080)**	0.2788 (0.1671)*	0.4352 (0.1909)**	-0.9186 (0.0678)***	0.4369 (0.1617)***	0.4777 (0.4777)**
PF	-4.9066 (0.0460)***	-0.5429 (0.2653) **	-1.9259 (0.4500)***	-1.1786 (0.0654)***	-0.1328 (0.3206)	-1.0633 (0.2696)***	1.6093 (0.1872)***	2.4268 (0.8790)***	2.97 (0.9593)***
ROL				0.0599 (0.0009)***	0.024 (0.0032)***	0.0417 (0.0033)***	0.1301 (0.0044)***	0.0978 (0.0219)***	0.1419 (0.0249)***
PRxROL							-0.0412 (0.0024)***	-0.0434 (0.0112)***	-0.0589 (0.0143)***
Likelihood Test		2003.6667***			833.3837***			828.1194***	
BPLM Test		2955.6220***			808.7919***			785.2131***	
Hausman Test		104.1032***			153.2807***			155.3989***	

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

As there are 3 different model estimation methods, we rely on specification test to choose the most appropriate estimation for our 3 model compare across model 1 to model 3. 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 BPLM test, the null of POLS preferred can be rejected while accept REM. So to decide whether FEM or REM is preferable, we use Hausman test. The result shows that FEM model is most appropriate for our model 1 to model 3.

4.3 Does Press Freedom Curbing Corruption?

To investigate the relationship between Press freedom and Corruption Perception Index, we included those common used variable that use by most of the author, such as Gross Domestic Product (GDP), Population (POP), Trade and Press Freedom (PF) as our independent variables into model 1. Model 1 is a simple model to check for the role of press freedom toward the Corruption Perception Index. The result obtained show that the coefficient of Press Freedom is having a negatively significant relationship toward the Corruption Perception. Which mean that, by increasing the press freedom in a country, it will tend to lower down a country corruption.

4.4 Does Rule of Law Matters?

In model 2, in order to identify the importance of rule of law, we included both rule of law and press freedom into the same regression without considers the interacting effect. Based on the result generated, the coefficients for rule of law are positive and statistical significant at 1% of significance level. This implies that with a well structural rule of law in a country, it will tend to lower down the

country corruption. When it comes to the factor that emphasize in this study, it can be concluded that the press freedom coefficient are negative but it statistically insignificant toward the corruption in model 2. While a well structure and strong base of rule of law tend to lower corruption levels, but the press freedom has no significant influence. Therefore, we further investigate by adding the conditional variables in order to cater the conditionally matters between press freedom and rule of law on the impact of corruption.

4.5 Does Conditional Variable Matters?

To achieve the objective 1 and 2, we look at the model 3. In model 3, the conditional variables are added into to capture their mutually effect. As the result generated from Model 2 shows insignificant in the press freedom toward the corruption, it is observes that some of the important variables that are essential in combining with the press freedom to affect the corruption. For example, based on the study of Lee B. Becker about the relationship between the media press freedom and corruption. The result showing there is a negative sign between press freedom and corruption. However, the result showing the relationship is only slightly affected (Becker, 2013). Therefore, from the academic and facts investigations, the rule of law is found as a dispensable variable to complement with the press freedom in order to present a joint effect toward corruption. Surprisingly the result reflects with statistically significant for press freedom on the impact of corruption. A bolt from the blue that the coefficient of press freedom on the corruption effect becomes positive which does not reflect the theoretical relationship that studied earlier. With the press freedom variable alone, it only caters the partial effect (direct effect) toward the corruption and it is inadequate in explaining in this regression. Instead of looking at the partial effect, the conduction of marginal effect has done to investigate the total effect (direct and indirect effect) of press freedom toward corruption.

So in order to capture the total effect, we are using the marginal effect of press freedom on corruption depends on the mean value of conditional variable rule of law. The marginal effect is calculated as follow:

$$\frac{\partial}{\partial} = 2.4268 + (-0.0434)(58.1537) = -0.0971$$

The result showing a negative sign of the coefficient of the interaction variable (δ), which had answers our objective number 1. By increase of press freedom will lower down the corruption in a country. Which mean that we can't only focus on direct effect or indirect effect, since the direct effect showing press freedom has a positive relation with CPI. With a positive relationship, it shows that press freedom will worsen or increase the CPI and this positive relationship cannot be support by our theory. So as result the total effect is importance and can't be omitted. But for further investigation, we would like to capture the marginal effect at the optimal and the calculation is showing as below:

Marginal effect at optimal, = 0

$$\beta_4 + \beta_5 \text{ROL} = 0$$

$$2.4268 + (-0.0434) \text{ROL} = 0$$

$$\text{ROL} = 55.92$$

Which mean that the minimum value (55.92) of country rule of law should achieve in order to capture the press freedom impact on CPI. If the country is having a rule of law value that lower than the minimum value of 55.92, the press freedom would have not much impact on CPI. For illustration purpose, we can look at the graph on the next page.

Figure 4.1: Rule of Law below 55.92

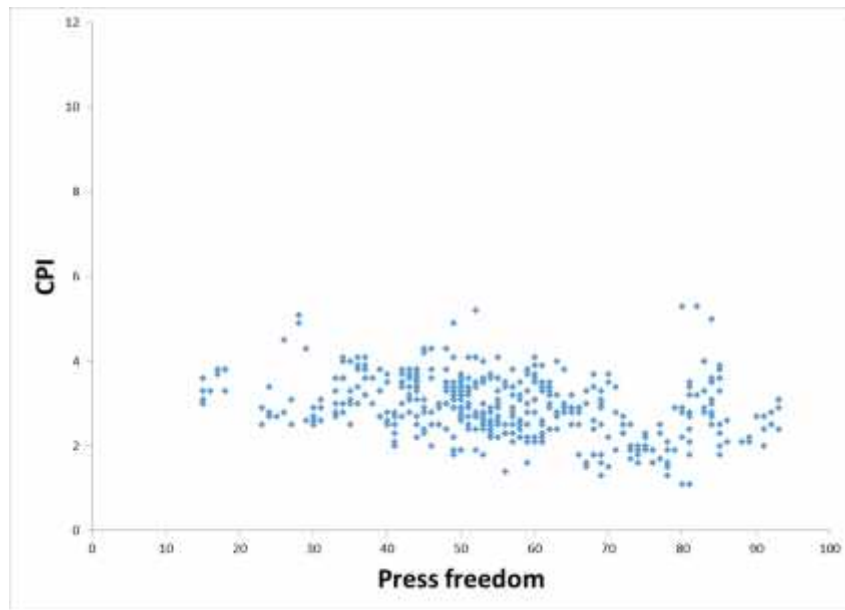
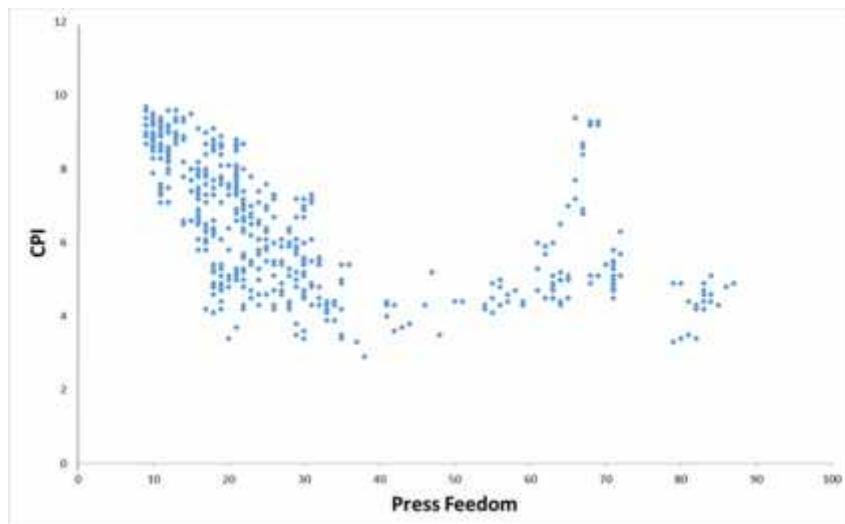


Figure 4.2: Rule of Law above 55.92



4.6 Developing, Developing and Underdeveloped Countries

To strengthen the point of view of the study previously, the investigation of the minimum value that must be surpassed in rule of law in order for the press freedom to have an impact toward corruption has been made. By developing the optimal marginal effect, the result is able to transmit an extremely story telling information where there has a minimum requirement for the rule of law to present the effect of press freedom toward the corruption. As the optimal marginal effect calculated previously, the minimum value of rule of law that a country must hold in order to present the impact of press freedom on corruption is 55.92. However, when the study on developed, developing and underdeveloped carry out, it can basically show the country that enjoy well structure rule of law will present a negative coefficient between corruption and CPI, vice versa. The purpose of this test is to achieve the objective number 3.

Table 4.4: Summary of Statistic on different background of countries

Different Background of Countries	Mean	Min.	Max.
<u>Developed</u>			
CPI	6.6763	2.4	9.7
PF	26.4209	9	87
ROL	82.1196	25.84	100
<u>Developing</u>			
CPI	3.3405	1.1	5.7
PF	54.5027	18	93
ROL	38.7368	0.43	83.17
<u>Underdeveloped</u>			
CPI	2.8957	1.4	5.3
PF	54.0643	23	85
ROL	33.2279	1.91	61.06
<u>Developing & Underdeveloped</u>			
CPI	3.2184	1.1	5.7
PF	54.3824	18	93
ROL	37.2245	0.43	83.17

*Notes: CPI is refer Corruption Perception Index, PF is refer to press freedom, ROL is refer to rule of law

Based on the table 4.4, the result showing that the average developed countries is having a low corruption perception index (6.68), high press freedom (26.42) and a well structure rule of law (82.12) compare to those developing and underdeveloped countries. Other than that, we also find out that the characteristic of press freedom and rule of law in developing and underdeveloped countries are very similar, therefore we combine it in order to provide a clearer picture on our objective 3.

Table 4.5: Marginal Effect capture on different background of countries

	Developed	Developing & Underdeveloped
Variable	Coefficient	Coefficient
PF	6.1989	0.3965
ROL*PF	-0.0774	-0.0042
ME	-0.1572	0.2385

*Notes: CPI is refer Corruption Perception Index, PF is refer to press freedom, ROL is refer to rule of law, ME is refer to Marginal Effect

Based on the results shown above, only developed countries surpass the minimum value of rule of law requirement and it did bring out the picture that when the rule of law surpass 55.92, the coefficient of press freedom turn negative which mean that with the complement of rule of law, it bring effect to corruption instead of press freedom alone. For more explanation, if the country emphasizes a strong penalty on the corrupt parties together with the freedom of expression, it will propose a strong effect toward the corruption. In the case of Singapore, the rule of law score 93.72 with the government enacted the Prevention of Corruption Act (PCA) on 17 June 1960 in order to define the corruption and the punishments for those corrupt parties. The law emphasize that if a party found guilty involve in bribery even if no bribe payment made, he or she shall be fine not exceeding \$100,000 or prison for not more than 5 years or both; if a person is proven with any transaction for conducting the bribery, he or she shall be fine \$100,000 or prison for not more than 7 years or both. With the well-defined and structured law together with press freedom, it represents that this will lead to less corruption in that country.

Oppositely, the developing and underdeveloped countries capture a poor rule of law with the score of 37.22 automatically illustrate positive coefficient where the rule of law doesn't strong enough to compliment with the press freedom in order to bring effect to lower down the corruption.

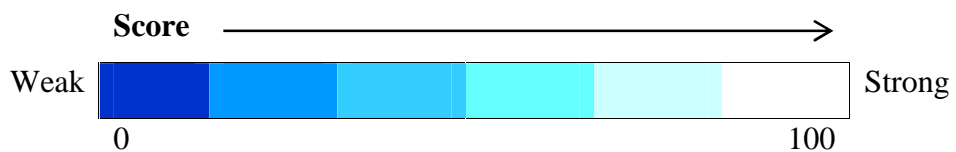
CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

5.1 Conclusion

In conclusion, corruption is one of the biggest global issues despite poverty, unemployment, income level and terrorism. Therefore, people are getting more concern about the corruption issue. Nowadays, the internet has grown widely and internet freedom people will have the chance or opportunity to anonymously participate in online activities such as Facebook and Twitter and they can report corruption through online. Internet facilitates dissemination of information so people can easier and more effectively lobby and organize. In some country, the government was takes action toward press freedom but in reality government use other way round that the authority actually restricts the press freedom from reporting. It can be seen as one of the biggest changes has occurred to the press where the governors literally restricted the presses to reporting the scandal. Denmark is a top cleanness country in Corruption Index and key factor that help achieve least corruption in Denmark is the press freedom role due they can enjoy high press freedom.

In the past literature, many studies do not include the important variable rule of law accompanied with press freedom. In that state of one's psyche, the well structure rule of law which mean corrupt politicians are high probability of getting caught. This might decrease the number of politician corrupt with the high degree of rule of law. Which mean that the rule of law is also is an important variable that will affect the corruption. So, we use the rule of law as conditioning variable in our studies. Without include the rule of law variable, it only integrate the partial effect (direct effect in our model) toward the corruption. In order to capture the total effect in our model, we use marginal effect of press freedom on corruption depend on the mean value of conditional variable which is rule of law.

In addition, there has three finding in our studies. (1)The result show that the press freedom is significant affect the corruption and have negative coefficient. Which mean that high press freedom with lead to least corruption. In our empirical studies reveal that press freedom help to reduce corruption. (Tella, 1999) states that the press freedom has potential to the external control of corruption. With the high press freedom among the countries, will tend to lead to least corrupt due to the media acts as watchdogs and hold political decision makers accountable for their action. In another way , with high degree press freedom in the countries, voter can use democracy way in turn to punish those corrupt politician and get them out from the parliament.(2)After we have add the conditional variable which is rule of law, we was surprisingly the press freedom become significantly impact of corruption. This empirical study show that conditionality matters in the sense that rule of law is an important conditioning variable that will impact of press freedom on corruption while high ranking of rule of law will has negative impact on the absence of corruption within the countries. The role of law increase the probability of detection for politician corrupt behavior and decrease the number of corruption; Hence, the study implies that both instruments (press freedom and rule of law) help reducing corruption independently from each other, but the literature also suggest that both institutional features work together in decrease the corruption. (3)investigation of capturing the marginal effect(total effect) on press freedom in different background of countries, only developed countries surpass the minimum value of rule of law requirement.



Ranking of rule of law

Last but not least, this study showing press freedom must work with rule of law in order to have greater effect on corruption price index. However , result prove that on the developed countries enjoy well structure of rule of law complement with press freedom will impact the coefficient become negative which mean bring effect to corruption instead of without add rule of law. The result shows that the level of rule of law in a country must be higher than 55.92 in order to get press freedom having negatively impact on corruption price index

(CPI). We can look at the case that happened in Maldives, one of the offices of a newspaper getting raided after broadcast a new that showing corruption allegations against the president.

5.2 Policy Implication

The policy implication from our study suggest that press freedom should accompanied by a rule of law to curbing the corruption. The result shows that the high ranking rule of law accompanied with the high degree of press freedom will lead to less corruption within the country. A country with high ranking in rule of law gives the protection for journalists. Where, it increases the transparency of information reported by journalists since they were protected by law and citizen able to evaluate the performance (corrupt behaviour) of politicians. Therefore, citizens are able to vote this corrupt politician out of the office.

For example, Finland combination highly press freedom (PF=10(very free)) and well structure rule of law (ROL=100) in year 2014 leads to least corruption (CPI=9.4least corrupt)). Finland is the top rating of press freedom in the world due to the high level of freedom enjoy by journalist in their working life. The media of journalist can write freely without interference from government. However, Finland have effective law and institutions in place to help or protect guarantee press freedom. The media publishers and international journalists union has form an organization as Finland's Council for Mass Media (CMM) with purpose of defending the free media and highlight the practice which dealing with the complaints. With well structure rule of law, politician will tend to least corrupt due to they might afraid to getting caught.

By taking into the cases of less well structure in rule of law, Jamaica illustrates the best case in presenting that the country with freedom in press (17 score) complement with the less well structure rule of law (44.23) doesn't improve the corruption condition (3.8). When Jamaica win its independence from

United Kingdom 1962, one of the provisions in the country constitution states that people should have the freedom to hold opinions in order to receive and impart ideas and information through the media without interference. In Jamaica, they can enjoy high degree of press freedom but defamation law remain an issue. Journalist might afraid or fear about defamation law. So the media can't report the new or issue without any supporter evidence. Nonetheless, there are still have some important issues to resolve it come to freedom of expression. The Jamaica government continues to work on reforming the country antiquated defamation law and measures it to protect the journalist (media) from persecution.

Last but not least, the average ranking rule of law in under-develop and developing countries is 37.2245. Therefore, our studies also suggests that the rule of law in both developing and under-develop countries need to strengthen the ranking of rule of law to a minimum value which is 55.92 (ranking) in order to present impact of press freedom on corruption. In another word, press freedom does not bring any impact for CPI in developing and under-develop countries, if the rule of law is below the minimum value. Therefore, the results may suggest that the countries should strength their rule of law in order to use press freedom to against the corruption within the countries.

5.3 Limitation and Recommendation

In this research, the limitation is we use Corruption Perception Index (CPI) represented the corruption level. Corruption Perception Index (CPI) is a perceived corruption exist among public politicians and government. CPI is determined by various expert assessments, opinion surveys from reputable organization. Corruption Perception Index (CPI) do not show the evidence of actual corruption. We recommend that the future researcher can collect data for actual corruption index in their future research in order to get more accurate result in their studies.

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