THE IMPACT OF PUBLIC SECTOR CORRUPTION ON ECONOMIC GROWTH

IN ASIAN REGION

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ABSTRACT

This study is motivated to identify the impact of the public sector corruption on economic growth in Asian Region over the period of 2008-2018. Corruption Perception Index (CPI) and Gross Domestic Product (GDP) are used as proxies to measure the public sector corruption in the countries and the economic growth respectively. The sample represents 24 countries out of 48 countries in the Asian region and it covers 11 years period of GDP data and CPI data. Granger Causality test is employed to identify the causality between CPI and GDP. The result of the Granger Causality Test reveals that there is no significant causality impact between CPI and GDP. Subsequently, Panel data regression has been used to measure the impact of corruption on economic growth. The result of random effect panel regression shows positive impact of CPI on GDP which is not statistically significant at 5% level. Further, Co-integration test has been used to test long run association between the variables as well as Fully Modified Least Square Method to illustrate the relationship between corruption and economic growth in the Asian region. The result of co-integration test reveals that there is long run association between CPI and GDP. Consequently, Fully Modified Least Square method shows the positive impact of CPI on GDP which is also not statistically significant at 5% level. Overall result reveals that there is no significant impact of CPI on GDP in the Asian region. This finding is important for government of each regional country for further to manage the corruptions in the country and public service providers for making their decision-making process.

Keywords: *Co-integration Test, Corruption Perception Index, Economic Growth, Granger Causality Test, Gross Domestic Product, Public Sector Corruption and Random Effect Panel Regression*

1. INTRODUCTION

Recent statics show that the corruption perception index is in a high position in the Asian region (Transparency International, 2019). However, economic growth of Asian countries shows a higher position when compared to lower corruption index. Hakimi & Hamdi, (2017); Ishola & Omoteso, (2009) discovered that corruption and economic growth of the country have a negative relationship. However, Mallik & Saha, (2016); Paksha, (2010) founded that corruption has a positive impact on the economic growth in the selected Asian country. Even though, each country measures individually the impact of corruption on economic growth it needs to measure overall impact of corruption on economic growth in regional base. Therefore, this study attempts to find how CPI influences to GDP in Asian Region.

Economic growth and corruption are some of the world's most demanding issues which require the long-term durability of a country. Though it is a prominent global issue, lack of the researchers has paid their concentration towards this concept as research. Therefore, it highlights the empirical gap of having in-depth research regarding corruption combining with economic growth in the Asian region which is a necessity for the regional development. And, the impact of corruption indicators on economic growth is not focused deeply by the country level. To fill the gap, this study

is going examine the impact of corruption on economic growth in the Asian region.

Research Objectives

The objective of this study is to examine the impact of corruption on economic growth in Asian region.

Research Hypothesis

H_0: There is a significant impact of corruption on economic growth in Asian region.

H_1: There is no significant impact of corruption on economic growth in Asian Region.

Significant of the Study

Corruption is the main issue in the country. If the country has corruption, it affects the entire economy too. On the other hand, economic growth is one of measures to determine the development of the country. If corruption harms economic growth, then economic growth will decrease. It shows that countries have an issue with their development or economic growth.

Policy Makers

The governing body of the country is policymakers. Hence, they want a better understanding about corruption and their economic growth. As a country their corruption level is high, they cannot perform their duties as stipulated as the public offers bribes in order to obtain speedy delivery, which helps them to minimize waiting time. In 2030, everyone wants to achieve

3

sustainable development goals. For that, they have to make a sustainable economic growth in the country but if country corruption is high, they cannot achieve that position. Hence as a country, they have to focus on corruption because all other countries of the world have to focus on development of their economy. In that situation, we have to know what type of relationship exists between corruption and economic growth. Based on that, country can plan the road map for the country. Policymakers have to get an overall picture of the country and they can make the policies for reducing corruption and uplifting the economic growth in the country. After knowing the relationship between corruption and economic growth in regions, it is easy for all counties to face unexpected corruption because already countries decide the plans to face unexpected corruption. And also, the government can implement rules and regulations to control that type of corruption. On the other hand, the government can appoint the supervision team to check corruption in the country. By using such types of strategies, after knowing the relationship between corruption and economic growth, the countries can face such type of situation in a very good manner.

Public sector service providers

The majority of corruption happens in the public sector office. Their staff members are always trying to make bribes and based on bribes, they speed the service delivery process. But they cannot imagine how it affects the country and service provider also. Hence, they have to focus on corruption. They can implement anti-corruption acts to prevent corruption in the offices after getting knowledge about the impact of corruption on economic growth.

Contribution to the existing literatures

This research will be more useful to potential researchers and people who are interested in this regard as a very little number of researches have been done on this area and this research fills the empirical gap of corruption-related researches. Moreover, it is important to highlight that research based on corruption has not been done in the Sri Lankan context and also for the Asian region as a whole. Therefore, this research can be identified as a turning point of researches regarding corruption and this will enhance the interest of future researchers for researching this area.

2.0. LITERATURE REVIEW

Different theories have shown their relationship between corruption and economic growth and what is the importance of corruption and economic growth to the country.

Game Theory Model

Game theory is a recognized theory of interactive decision making, used to model any decision involving two or more decision-makers or persons. In fact, this theory can apply to the decision based on corruption. The theory approach is preferred because it can most effectively explain the foundation for decisions of reasonable men to be corrupted. A simple model is presented showing how bribery might be a dominant strategy infirm. Macrae, (1982) discusses the corruption and underdevelopment in the country with game theory model. The approach is most useful for answering decisions based on corruption. The Private exchange between demand and supplier to the allocation of resources, both parties want to gain from transaction. In that situation, they decide to make bribery. Most commonly this bribery happens in the public firm based on the monetary result. South East Asia (SEA) has the incentive to make corruption and other hand African countries have confirmed its grip of the public sector. African countries noted that, it raises the economic development as a general of economic development. However, these countries make corruption based on the incentives of the political leaders. Macrae, (1982) found that South East Asia and African countries get as the best corruption country in long-lasting. Generally, markets can divide into perfect conditions, monopoly, and oligopoly markets. These markets full of information asymmetry. Due to this information asymmetry, corruption can occur. The perfect competition market has full of information and fewer amount of information asymmetry. Hence a less amount of corruptions can happen but anyone cannot give a guarantee for it. Corruption may help bureaucratic efficiency by quickening the process of decision-making and the execution of decisions. Queues, greed for monopoly profits, impatience in front of structural inefficiencies motivated the corruptions in the firm. In addition, risk-takers involving corruption because they are like to get more risk towards them. Therefore, risk-takers decide the corruption price. The relationship between corruption price and risk-taking is straightforward (Macrae, 1982).. Agency theory shows the relationship between principle and agent. Moreover, the theory focuses on the information of relationship. Majority of situations principle have a smaller number of information because the agent has more and better information about their client. It means information asymmetry between principle and agent of the situation. Hence corruptions happen in that relationship also based on the imbalance of the information (Department for International Development, 2015). Principal and agent theory shows the negative effect of the corruption on economic growth (Farida & Ahmadi, 1999).

Equilibrium Queuing Model

Fransic, (1985) discovers the equilibrium queuing model of corruption. Equilibrium queuing model developed for the public administration and queue of the office. Fransic, (1985) discusses the extended part of the queuing model using Klein rock model, customers who pay small bribery in front of the queue than the customer who pays the larger amount of bribery behind the queue. That bribery amount decides by the server rather than the customer. They do not consider the spending time of the customer. In this model larger burden is information. Fransic, (1985) discusses Rose-Ackerman's propose system; the customer pays large bribery to get larger priority in the queue than low bribery to get lower priority in the queue. In other hand, this bribery amount is decided by the customer based on the opportunity cost of the time to be spent. Fransic, (1985) develops an equilibrium queuing model using the following assumptions after considering the previous model. Such as all customers come in the end of the queue, other ends of the queue, servers distribute the monetary gift to the customer and consider the spending time of the customer. Different customers have a different cost of value based on their opportunity cost. When customers come to the end of the queue, they can decide not to join the queue or make bribery to get the grate position of the queue. That bribery amount decides by the customer based on

the time that must be spent. The Final assumption is server ejects the customer from the service, not the queue because another customer pays a large amount of bribe to the server. Fransic, (1985) found bribery is the lubricant for reducing the waiting cost in the office. Public service offices have long queues and longer waiting times. Hence the waiting cost is high. Businessman makes bribery to reduce the waiting cost of businessmen and other clients of the public service office. On the other hand, upcoming customers did not choose to join the long queue because the waiting cost is high. Hence, they use to pay bribes to the officials. Public administration could improve bribing tactics to reduce waiting costs from a non-corporative Nash Equilibrium game among businesses. In Nash, equilibrium customer uses bribery strategies to reduce the waiting cost and get a great position in the queue. On the other hand, the public administrative staff is trying to increase bribery revenue in Nash Equilibrium. When public administrative staff increases bribery revenue corruption amount increases in the firm. And also public administrative delays cause for the corrupt officials (Fransic, 1985).

Modernization Theory

Modernization theory discusses the traditional societies or countries adapt to modern practices. Modernization theory can discuss on two sides. One side is the micro-

6

economic side and other side is macro-economic side. Goorha, (2017) discussed the modernization theory in the classical way. Microeconomic modernization focuses on social modernization such as urbanization, gender, income inequality, skills acquisition and education, the role of political communication and the media, bureaucratic corruption, and others. Macroeconomic modernization focuses on the empirical courses and manifest process of the modernization of nations and their societies, economies, and policies. Modernization theory argues corruption and economic growth have a positive relationship (Ishola & Omoteso, 2009). Modernization changes everything in the country at a micro and macro level. It affects the country's business and public service in the country. If modernization was done in macro-level government policy also changes and it boosts economic growth.

Economic Growth Theory

Economic growth is referred to an increase in the capacity of an economy to produce goods and services, compared from one period to another which is measured by nominal or real terms. Economic growth theories have emerged and they mainly focused on improvements in the quality life of people with an increase in productive capacity (Adamopoulos, 2010). Mercantilism theory, Classical theory, Endogenous growth theory, Neo-classical

theory, slow growth model, and Keynesian demand-side theories can be known as major economic theories relating to economic growth.

The Slow growth model was developed by Robert Slow, which was the basis for the modern economic model. The Slow Growth Model is an exogenous model of economic growth. Changes in the population growth rate, the savings rate, and the rate of technological progress are analyzed by the changes in the level of output in the economy over time. Farida & Ahmadi, (1999) discussed the theoretical model using extend Slow growth model to include corruption as a determinant of the multifactor productivity. Corruption alters the effectiveness of government expenditure, upward movements in corruption have an inverse relationship with the growth of output per capita and if the omission of corruption term standard neoclassical result.

Neo-classical economic theory started in 1990. According to the neo-classical theory consumer wants to maximize their satisfaction. Because of that situation, they purchase goods and services based on the utility of goods and services. This theory concerns the rational decisions of consumers because those decisions affect economic decisions. Also, Neo-classical growth theory discusses the utility of the services, when one service maximizes the utility of the

7

consumer it automatically impacts the economic growth. Mallik & Saha, (2016) found the corruption and growth complex relationship and they consider the neoclassical growth theory. Mankiw et al., (1992) discussed how economic growth is a boost. And higher school enrolment and investment ratio boost economic growth, and higher population growth and higher value of government expenditure decline the economic growth. Ahmad et al., (2012) discussed the growth model of corruption. Furthermore, they discussed the impact of corruption on economic growth. According to that, corruption is to be growth-enhancing at low levels of incidence and growth-reducing at high levels of incidence.

Corruption

Corruption means dishonesty or criminal offense done by the person who is engaging in the firm to gain the illicit benefit or private gain. Majority of corruption happen based on behavior of people. Such as public service provider takes monetary values to give service for their clients, politicians misuse public money by giving public jobs to the favorable persons and making bribery incorporate officials. Corruption happens in the shadows. Shadows filter and hide the illicit gain of the firm. On the other hand, corruption disobeys the rules, regulations in the firm, and changes the process and system or technology of the company or firm. Economic cost, environment cost,

social cost, and political cost can imply corruption (Transparency International, 2019). Corruption is the abuse of public power for private befit and corruption is the main obstacle in the developing countries in the world (Anderson, 2015; Farida & Ahmadi-Esfahani, 1999; Freckleton et al., 2012; World Bank, 2018).

Hakimi & Hamdi, (2017) discussed another definition of the corruption done by the United Nations Convention against corruption. It discussed corruption as petty and grand corruption. Grand corruption describes the pervades at highest levels of government, engendering major abuses of power and petty corruption describe administrative corruption, and grand a small amount of money. However, bribery has two sides of bribery. Such as offering or paying the bribe and requesting or receiving the bribe. Corruption impacts the poor vulnerable and increases the cost of access to the services. According to the empirical studies poor income earners pay a high bribe than high-income earners in the countries. Also, corruption mislead the trust of the government because of corruption hidden the real winners of the government contracts. On the other hand, corruption affects the investment, weakens the social contracts and growth of the country (World Bank, 2018). Bribery is the main type of corruption and corruption attempts to by-pass the failed governments (Anderson,

2015). The number of corruptions happens in the country such as fraud, collusion, bribery, facilitation payment, extortion, patronage, clientelism, and nepotism. All types of corruption can explain as the dishonesty of the people. Political corruption and bureaucratic corruption are two main parts of corruption in the country. Political corruption involves the highest level of political authority involvement and resource allocation in the society. Bureaucratic corruption focuses on the public policy implementation in the country and that policies involve the appointment of public administrative staff. Top of the public administrative staff makes corruption in providing service to private service providers. They are entitled to extra payment or speed money to provide speedy service to the private service provider. On the other hand, they make bribery to secure their promotion the firm and they disobey with the rules and regulations in the firm (Department for International Development, 2015). Augusto, (2013) discussed the type of collusion between two parties, which one party in the private sector and they pay a bribe to the other party in their agreement. Ahmad et al., (2012) revealed that the researchers focus on corruption in weakness in the public institution and distortions in economic policies. Corruption happens in the allocation of resources in the government. Corruption happed in the following ways. One way of corruption

happed in changes in the relative price changes in products and services. In that situation corruption also happen because decisions of the private investors are changed. Another way of corruption in the misallocation of resources in the government funding to the investments, sales of government property patronage and nepotism (Ahmad et al., 2012; Augusto, 2013; Clement &Aina, 2019; Farida & Ahmadi, 1999; Freckleton et al., 2012; Pulok& Ahmed, 2017).

How to measure the Corruption

Corruption is the illegal behavior of people and corruption in the country is measured in globally. Business International Index (BI), International Country Risk Guide (ICRG) Index, Global Competitiveness Report (GCR) Index and Transparency International (TI) index used to measure the corruption in the country. The Business international index measures the corruption in the country the degree to which business transactions involve corruption and ranked 1-10 according to the corruption in the business transaction. However, ICRG index based on the opinion of experts, and supposed to capture the extent to which high government officials are likely to demand illegal payments. However illegal payments are generally expected throughout lower levels of government in the form of illegal payments connected with import and export licenses, exchange controls, tax assessments,

9

police protection, or loans. GCR index measures by the firm's managers with the support of the world economic forum. In that index rate the level of corruption on one to seven scale according to irregular payment connected with import and export permits, business licenses, exchange controls, tax assessments, police protection, or loan applications (Shang, 1999). Most researchers use Corruption Perception Index (CPI) to measure corruption in the country-wise and it is the indicator of corruption worldwide. Transparency international organization uses its own methodology to measure the public sector corruption in the country. The CPI scores and ranks countries/territories based on the public sector in the country. Furthermore, the CPI measures how corrupt a country's public sector is perceived to be by experts and business executives. The CPI is a composite index, a combination of 13 surveys and assessments of corruption, collected by a variety of reputable institutions The CPI score the 0-100 scale and 0 equal to the highest perception of corruption and 100 equal to the lowest level perception of corruption (Transparency International, 2019). As a country's perception of corruption does not change from a year to year and developing country corruption is higher than developed countries' corruption (Ketkar et al., 2005).

Public Service and Corruption

The government of a country provides public service to country. Public service provides provision of judicator or indirect way of the private sector. On the other hand, the government focuses the social welfare in the society. The majority of government provide health, education, electricity, and other services related to social welfare (Science Daily, 2017). The service sector plays a crucial role in East Asia and the resource allocation of the service sector affects factor productivity (Gani & Clemes, 2010). The majority of public officials bribe and the bribery is the prevalent type of corruption in the public office (Anderson, 2015). The public service of the country has a significant impact on the economic growth in the country. Because the government spending more expenditure on public services. Empirical studies show the service sector like transportation and other facilities provided by the government has a significant impact on economic development in the country (Ronald, 1997). Public service staff make corruption using speeding money to increase the delay service to attract private investors in the country (Mallik & Saha, 2016, Begovic, 2005); Department for International Development, (2015) revealed the wage level of the public sector service providers and corruption have a negative relationship. Because the government provides a low amount of compensation or wage for their

10

staff, they want to earn more income to strengthen their standard of living and they go for bribery and make corruption in the public service in the country. Moreover, bureaucratic intensives for jobs in the public service providers make corruption because they have not monitored the process. The economy system in the country strengthens the corruption in the country. If the country has lacking economic system for public service providers and other person linked to the economic system, make income to enrich their income other than enrich the country's wealth. The economic system has weak regulations and controls to control corruption in the country. It is the causes for the country's economic crisis. East Asia Tiger, China and Vietnam give as an example of that type of economic crisis. In some instances, corruption can be "market-enhancing" and enable social transformation in developing countries (Department for International Development, 2015). Government bureaucracy is important to the public official and bureaucracy implement the laws to prevent corruption in the office (Papaconstantinou et al., 2013). Public servants of the government make rent-seeking action and also they make bribery transfer the tangible resources and public services which courses for negatively private investment in the country (Ahmad et al., 2012). Empirical evidence shows government employee or government tires report more bribes in the country (Augusto,

2013). Bribes cannot be tolerated and defended based on the argument that they offset the incompetence and uncertainty of many government rules and regulations and not all bribery payments improve the slow growth of government bureaucracy (Muhammad Ali et al., 2019).

Economic Growth and Corruption

Economic growth increase in the capacity of an economy to produce goods and services, compared from one period to another which is measured by nominal or real terms. Economists, government and private sector development organizations focus on forecasting and promoting economic growth of regions and nations. Economic growth is generally promoted through efforts of increasing labor productivity where labor productivity is crucial to the strength and growth of the economy. Gross domestic product growth is the main indicator of economic growth in the country. GDP measures by using three approaches such as a production approach to finding gross value added an expenditure approach and an income approach (World Bank, 2010). Corruption weaken the trust, burden the economic growth and democracy, poverty, social division, and other social matters (Transparency International, 2019). Corruption closely links to economic rent and rent-seeking. The Monopoly market shows the corruption (Begovic, 2005; Department for International Development,

11

2015). Ahmad et al., (2012) found that corruption and economic growth have a negative effect because of the cost of public service administrative high-cost effects for reducing the private sector investments and weaken the growth in the country. And some of the researchers argued that economic growth and corruption have a positive relationship because bribes make speed money and speed money affect for speed administrative process and positively affect the economic growth in the country. Ahmad et al., (2012) found that decrease in corruption raises the economic growth rate in an inverted U-shaped way. Corruption has not a significant impact on economic growth because investors focus on institutional efficiency, capital effectiveness, profitability, and other significant variables other than the corruption in the country (Freckleton et al., 2012). Also, corruption increases bad debts and lower the rate of economic growth (Muhammad Ali et al., 2019). Paksha, (2010) revealed that corruption and economic growth has a positive association. Because Bangladesh boarded on a market economy and released private investment, but they failed to implement related regulations to control the economy. In that situation, people earn more income and producers have more business opportunities. However corruption increases as well as increase economic growth. Shittu et al., (2018) found that corruption and economic growth have a positive

relationship and they provide economic growth. Furthermore, corruption increases in China and South Korea's anti-corruption policies are not effective and increase corruption and economic growth. Shittu et al., (2018) found corruption and economic growth have a positive relationship and uni-directional causality running from economic growth through corruption. However, Ishola & Omoteso, (2009) corruption impacts negatively on economic growth while rule of law, democratic accountability, and bureaucratic quality may have a positive impact on the economies. Mallik & Saha, (2016) reveal corruption and economic growth could not find a direct relationship because corruption positively impacts some countries and corruption negatively affects economic growth of other countries. The level of corruption should be associated with a lower level of national productive entrepreneurship. Corruption hurts economic growth depending on the country-specific characterizes (Avnimelech et al., 2014). As an individual country, Bangladesh has a long-run association between corruption and economic growth (Pulok& Ahmed, 2017). In European Union countries corruption has a significant negative impact on the economic growth founded by (Papaconstantinou et al., 2013). As a country, Lebanon is a developing country in the world. According to the transparency international Lebanon CPI is high. Corruption and economic growth in

12

Lebanon have a significant negative relationship because corruption decreases the investment and standard of living in the country. According to the empirical show that developing countries' corruption has a negative impact on economic growth because endogenous variables such as production, consumption, domestic investment, employment level have a significant negative effect on corruption (Farida & Ahmadi, 1999).

3. METHODOLOGY

This section describes methodology for this study in brief. Empirical related to this area uses different variables to test the impact of corruption on economic growth. However, gross domestic product (GDP) and corruption perception index (CPI) are most suitable variables for test the impact of corruption on economic growth in the country. Researcher investigates the impact of corruption on economic growth in Asian region for the period 2008-2018. This study uses corruption perception index developed by the transparency international as a proxy to measure corruption in each country. Consequently, the economic growth is measured by the using economic growth rate in the country. The economic growth treated as dependent variable and corruption perception index treated as independent variable. .

Corruption Perception Index (CPI)

The CPI scores and ranks the countries/territories based on the public sector in the country. The CPI measures how corrupt a country's public sector is perceived to be by experts and business executives. The CPI is composite index, a combination of 13 surveys and assessments of corruption, collected by a variety of reputable institutions. The CPI score the 0-100 scale and 0 equal to the highest perception of corruption and 100 equals to the lowest level perception of corruption (Transparency International, 2019).

GDP Per Capita Growth Rate (GDP)

The gross domestic product (GDP) measures the economic output of a nation. Also, it uses for the measurement of the economic development. The GDP growth rate shows the percentage change the in value in all service and goods in the country. And, Per capita gross domestic product (GDP) is calculated by country's GDP divided by population of the country. It shows that how much counties output for per person. Furthermore, GDP per capita growth rate measures by comparing one quarter of the country's gross domestic product to the previous quarter.

Sample of the Study

Sample site of this study limited to 24 countries among 48 countries in the Asian region namely Armenia, Bahrain, Bangladesh, Bhutan, India, Indonesia, Iran,

13

Jordan, Laos, Lebanon, Malaysia, Nepal, Oman, Pakistan, Philippines, Sri Lanka, Thailand, Vietnam, Hongkong, Israel, Japan, Saudi Arabia, Singapore and United Arab Emirates..

Data Collection

This study conducted based on secondary data for the period from 2008 to 2018 to examine the hypothesis defined by the researcher. Data of this study were gathered from World Bank data library and further data was gathered through transparency international.

Data Analysis

Ishola & Omoteso, (2009) defined panel data framework suit for test the cross country section effect because panel data framework allows the difference of unobserved individual country effect and control the heterogeneity effect for the data of the study. Panel data framework gives more informative, control bias, less co-linearity, more variability and more efficiency output. Firstly, researcher runs random effect panel regression to get most appropriate model for the study. Then, Hausman test applies to select the appropriate model for the research study between random effect and fixed effect (Ishola & Omoteso, 2009).

Unit Root Test

Researcher used unit root test for the check the stationary in all variables. Before

running the model must check the stationary of each variable. The ADF test determines the acceptance or rejection of null hypothesis against the alternative hypothesis to check the stationary.

Granger Causality Test

Researcher used granger causality test to check the impact on corruption and economic growth in Asian region. Granger causality tests whether corruption impact to the economic growth or whether economic growth impact to the corruption.

Pedroni Residual Co-integration Test

Furthermore, researcher used co-integration test to examine the long run association between independent variable and dependent variable. Researcher tests whether corruption and economic growth of the Asian region have long run association or short run association.

Panel Fully Modified Least Square Model (PFMLS Model)

Finally, researcher test the relationship of corruption and economic growth is significant or not significant for Asian region countries using the panel fully modified least square model.

4.0 ANALYSIS AND DISCUSSION

Unit Root Test

Table 4.1: Unit Root Test for the Period: GDP

Method	Statistic	Prob.**
ADF - Fisher Chi-square	123.22	0.000
ADF - Choi Z-stat	-6.189	0.000

14

Source: (E-view 10: Output, 2020)

Table 4.2: Unit Root Test for the Period : CPI

Method	Statistic	Prob.**
ADF - Fisher Chi-square	178.96	0.000
ADF - Choi Z-stat	*-7.136*	0.000

Source: (E-view 10: Output, 2020)

The results of Augmented Dicky Fuller (ADF) and Fisher Chi-Square unit root tests at level are presented in table 4.1 and 4.2. The result indicates that both variable are stationary (has no unit root) P value is less than 0.05 in level series. It means that CPI and GDP are stationary at level series.

Granger Casualty Test

The granger causality used for test the granger casualty among corruption and economic growth in Asian region. Granger causality test check whether corruption affect to the economic growth or the economic growth affect for the corruption in Asian region. Following table shows the granger causality among corruption and economic growth in Asian region.

Table 4.3: Granger Causality between GDP and CPI in Asian Region in 2008 -2018.

Null Hypothesis	Statistic	Prob.**
CPI does not Granger Cause GDP	1.58	0.207
GDP does not Granger	0.764	*0.466*

Cause CPI		

Source: (E-view 10: Output, 2020)

Results reveals that CPI does not granger cause to the GDP in Asian region as well as GDP does not granger cause to the CPI in Asian Region. It implies the there is no significant impact between CPI and Economic Growth in Asian Region.

The Durbin-Wu-Hausman Test

Based on the results generated from random effect model it is run the Durbin Hausman test. Then Durbin-Wu-Hausman test is to test appropriate model for the impact of corruption on economic growth in Asian region within 2008 -2018 period.

Table 4.4: Correlated Random Effects - Hausman Test

Variable	Fixed	Random	Prob.
CPI	0.061558	0.075118	0.1176

Source: (E-view 10: Output, 2020)

The Hausman test confirms that the random effect model is the most appropriate model in this case.

Random Effect Model

Following table displays random model for corruption on economic growth in Asian region within 2008- 2018.

Table 4.5: Random Effect in Asian Region

Variable	Coefficient	Prob.
C	2.416	0.00
CPI	0.075	0.30

Source: (E-view 10: Output, 2020)

The results of table 4.5 show that there is positive impact form CPI to GDP however,

15

which is not statistically significant at 5% level. It also implies that corruption of countries has not significant impact to the economic growth in Asian region.

Pedroni Residual Co-integration Test

Then researcher uses Pedroni Residual co-integration test to check whether corruption and economic growth have long run association in Asian region.

Table 4.6: Results of Pedroni Residual Co-integration Test

Alternative hypothesis: common AR coefs. (within-dimension)				
	Stat.	Prob	Weighted Stat.	Prob.
Panel v-Statistic	-1.28	0.89	-2.11	0.98
Panel rho-Statistic	-2.72	0.00	-2.29	0.01
Panel PP-Statistic	-8.05	0.00	-7.76	0.00
Panel ADF-Statistic	-7.95	0.00	-7.58	0.00
Alternative hypothesis: individual AR coefs. (between-dimension)				
			Statistic	Prob.
Group rho-Statistic			0.609	0.728
Group PP-Statistic			-8.065	0.000
Group ADF-Statistic			-8.453	0.000

Source: (E-view 10: Output, 2020)

The Co-integration Test reveals that 8 tests out of 11 confirm that there is a long-run association between CPI and GDP.

Fully Modified Least Square Model (FMLS)

Pedroni residual co-integration test illustrates that the corruption and economic growth of the Asian region have a long run association. Furthermore, researcher uses panel fully modified least square model to test whether long run relationship significant impact to the corruption and economic growth in the Asian region.

Table 4.7: Panel Fully Modified Least Square Model: 2008 -2018

Variable	Coff.	Prob.
C	2.416	0.00
CPI	0.075	0.30

Source: (E-view 10: Output, 2020)

According to the above table corruption of Asian region have 0.059528 positive impact to economic growth in Asian region but which is not statistically significant at 5% level. It means increase CPI in 1% economic growth of the Asian region increase 5.95%. However, P value is 0.4592 and it higher than 0.05 in 95% level. Hence result of panel fully modified lease square model demonstrates that corruption and economic growth have positive but not significant impact in the Asian region.

DISCUSSION

The granger causality test used for the check the directional causality between CPI and GDP. Shittu et al., (2018) found that CPI and GDP have uni-directional causality in SSA countries. However, corruption affect for the economic growth in the country and growth of the country not affect for the

16

corruption in Bangladesh (Paksha, 2010). Consequently, the study found that no any causality between CPI and GDP in Asian region. Random effect of panel regression shows the statistically significant negative impact to the CPI and GDP in selected transitional countries (Ishola&Omoteso, 2009). Random effect model of the panel regression demonstrates positive impact to the corruption on economic growth of Asian region but not statistically significant. According to that researcher find the impact of corruption on economic growth in Asian region. It is a good signal for the Asian region. On other hand, researcher test Pedroni residual co-integration test to check whether corruption and economic growth has the long run and short run relationship. This study reveals that CPI and GDP have long run relationship in Asian region. Consequently, CPI and GDP have long run relationship in SSA countries (Shittu et al., 2018). Finally, researcher test the panel fully modified least square model to test whether long run relationship is positive or negative. This test illustrates that CPI and GDP have positive relationship but not significant in Asian region. Finally, the entire result of the analysis shows that there is no significant impact form corruption to economic growth in Asian region.

4.   CONCLUSION

Researcher found that corruption has no impact to the economic growth in Asian region and its emphasis that, countries gross domestic product is not be significantly fluctuate because of the corruption in the public sectors in every country in the Asian region. Therefore, from this finding, the study highlighted the there is no significant impact to the changes in corruption to the changers of corruption in the Asian region countries for the period of the 2008 2018. Since the finding shows corruption has no impact to economic growth. Hence policy makers of the country must give their attention to that global trending concept for the wellbeing of the country and person who live in the country. Also, policy makers give their better consideration for the corruption in the public sector corruption in the country because finding stress out there is no impact. Nevertheless, corruption increase in abnormal way it may be affect in worst way to the country. Further relevance to the findings of the study, to promote economic growth within the countries in Asian region, necessary authorities should make actions to increase the efficiency of the public services in the country because public service providers provide main infrastructure facilities of the country. If country infrastructure facilities are in better way it affects for the efficient growth of the economy. To achieve the target government of the country can implement the rules and regulations to control the corruption the public service official and all the country work place. Moreover, administrative staff

17

of the public service providers' institutions has responsibility to control the corruption in their institution.

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20