

Corruption and Economic Growth: A Case Study of Nigeria

Ogunoye A. A. (Ph.D)¹ & Adeyemi P. A. (Ph.D)²

¹Department of Economics, Adekunle Ajasin University, Akungba Akoko

²Department of Economics, Ekiti State University, Ado-Ekiti

ABSTRACT

The study looked at the relationship between corruption and economic growth in Nigeria between 1995 and 2019. Data from the Central Bank of Nigeria's statistical bulletins, the World Bank's Development Indicators, and Transparency International were used to create the series. The study used Johansen Cointegration and a Fully Modified Ordinary Least Squares (FMOLS) approaches to estimate the relationship between corruption and economic growth in Nigeria. According to the findings, both corruption (COR) and total employment (TEM) are positively and significantly associated with Gross Domestic Product. A positive association occurred between Government Recurrent Expenditure (GRE) and Gross Domestic Product (GDP), but it was not statistically significant. Furthermore, the research found a significant inverse relationship between Government Capital Expenditure (GCE) and Gross Domestic Product (GDP). Overall, the results showed that dependent and independent factors had a long-term relationship. In line with the findings, the study recommends that government should step up efforts to reorient the society to do away with corruption by setting high ethical standards to which citizens must strictly comply. In addition, the plundered and stolen funds recovered from corrupt persons should be used prudently for the common good.

Keywords: Corruption, Government Capital Expenditure, Gross Domestic Product, and Fully Modified Ordinary Least Square.

1. Introduction

Corruption is a long-standing practise that stretches back to pre-civilization ages and has been reported in both developed and developing countries' old civilizations. According to the International Centre for Economic Growth (1999), corruption is a disease that has spread throughout a country's economy and affected the work of several government organisations. Corruption is one of the largest concerns internationally, according to Transparency International (2005) that fundamentally distorts government policy, hinders private sector development, weakens decent government, and also incapacitates the poor. There is no single definition of corruption because it is determined by the players, profiteers, and initiators, as well as how and where it occurs. Some scholars describe corruption in the largest context, while others look at it from a narrower perspective. According to the International Monetary Fund (IMF), it is "the abuse of public office for personal benefit"

Academics, economists, and policy makers have continued to debate the relationship between corruption and economic growth in Nigeria due to the country's high level of corruption and its effects on economic progress. The development of public administrative activities, as well as the discovery of oil and natural gas, is two major events credited with contributing to Nigeria's continual rise in corruption. Nigerian governments have tried, but failed, to combat corruption by enacting legislation and enforcing an integrity system.

Greed, expensive lives, conventions, and people's mind sets are regarded to be the root causes of corruption. Tribalism is another salient cause of corruption. Friends and relatives seeking favour from authorities might put a pressure on the official's ethical temperament since these relatives perceive government officials as conduits for their individual comfort and benefit. Corruption in Nigeria is highly responsible for a slew of unresolved issues that have stifled and retarded growth (Ayobolu, 2006). It is also a key political and economic growth problem for Nigeria in the long run (Sachs, 2007).

When placed in their correct contexts, corruption and economic growth are absolutely opposed notions. To corrupt anything means to alter its original state in such a way that it becomes damaged or spoilt in some way. On the other hand, economic growth is a strategy for boosting an economy's productive capacity as well as its output of commodities and services. Transparency International has classified African countries as more corrupt than others for more than a decade, with Nigeria placing among the most corrupt African countries (TI, 2001). According to ADB (2003), Nigeria is also one of the most corrupt countries; beginning with rather innocuous incidents in the 1960's, corruption has grown bold and hungry, indicating that public servants have gotten more irresponsible and blatant.

Corruption has infiltrated all sectors of Nigeria's programmes and projects, necessitating the use of all available methods to effectively combat it. Nigeria has put in place possible measures to combat corruption; yet, it is like the poverty that afflicts the country while the implementation of the laws impairs the society. To accomplish the goal of a corruption-free society in Nigeria, the country has experimented with a variety of strategies, programmes, and policies, including the Code of Conduct Bureau, the Public Complaints Commission, the Mass Mobilization for Social Justice and Economic Recovery (MAMDSER), the War Against Indiscipline and Corruption (WAIC), and the 1995 Anti-Money Laundering Act, which was re-enacted in 2004, the conviction of high-ranking government officials, and the Economic and Financial Crime Commission (EFCC). However, to our greatest surprise, corruption still continues to spread despite all the ostensible weapons of anti-corruption warfare.

Also, corruption can be in form of bribery, which involves disbursements by persons or firms to public officials as a way of influencing administrative decision under their responsibility. It may be in form of misappropriation of public assets by government officials or cooperation between public authorities and private operatives. Corruption can also take the shape of public funds being diverted for private gain, among other things. According to Campos *et al.* (2010) and Fabayo *et al.* (2011), any segment of the economy that is corrupt would stagnate. If there is bribery and embezzlement in the education sector, the sector will be characterised by corruption and they would be no achievement of the objectives and goals in the sector. Consequently, corruption is detrimental to economic development. However, some studies like Leff (1964), Rock and Bonett (2004) and others have also argued that corruption may not hamper growth.

On this note, the necessity of studying corruption continues to generate divergent views from academic perspectives. Leff (1964) conducted the first detailed examination of the relationship between corruption and growth. He opined that, under certain circumstances, corruption can be of a great help to economic growth and investment, arguing that it enables a country to engage in beneficial trades that would not have occurred without corruption. These economists are referred to as the 'growth greasers.' The other hypothesis on the influence of corruption on economic growth was dubbed the 'sanders' of growth, a description that Rock and Bonett (2004) verified. These are economists who carried out

research using the sand in the wheels' growth idea. Additionally, Obayelu (2007), Nageri, Guru, and Abdul (2013), as well as James (2018), have demonstrated that corruption has a major detrimental impact on economic growth and development. Regardless of the divergent positions expressed above, it suffices to state that there are several possible variables that enable corruption to operate gallantly in Nigeria. These elements include the following: (a) Leadership (b) Production Mode (c) "Nigeria Democracy" (d) Judicial System. Against this backdrop, the purpose of this study is to examine the relationship between corruption and economic growth in Nigeria.

2. Literature Review

2.1 Conceptual Issues

2.1.1 Concept of Corruption.

Examples of corruption include public personnel demanding or taking money or favours in exchange for services, politicians wasting public funds or providing public employment or contracts to their sponsors, friends and families, corporations, and bribing officials to achieve advantageous deals. Corruption undermines democracy, stifles economic growth, and exacerbates inequity, poverty, social division, and environmental calamity. Corruption can occur in any area of the economy, including business, government, the media, the courts, and civil society. Politicians, government officials, public servants, and members of the general public are all possible participants.

2.1.2 Concept of Economic Growth

A rise in a country's overall output of goods and services is characterised as economic growth. A country is deemed to be growing economically when the asset prices market value of its products and services rises. The major indicator of economic growth is GDP, which shows how fast a country's economy is growing.

2.2 Empirical Review

Mauro (1995) studied the relationship between corruption and economic growth in 67 countries around the world from 1960 to 1985. After adjusting for a variety of economic and socio-political variables, the results revealed a negative relationship between corruption and economic growth. Furthermore, Keefer and Knack (1995) used 2SLS to examine the impact of corruption on economic growth, discovering a negative link between corruption and GDP growth. Others, such as Robert and Charles (1999) and Sachs and Warner (1999), have achieved similar results (1997). And Mo (2001) looked at the direct and indirect consequences of corruption on economic growth using long-term per capita GDP growth rates from 1970 to 1985. According to the data, corruption has a slight negative impact on growth.

Leff (1964) investigated corruption and economic progress. He suggested that under certain situations, corruption can help a country make beneficial deals that would not have happened otherwise. Rahman *et al.* (1999) investigated the impact of corruption on Bangladesh's economic growth. Corruption inhibits economic growth by reducing foreign direct investment (FDI).

In East Asia, Rock and Bonett (2004) investigated the relationship between corruption, growth, and investment. According to the report, corruption contributes to economic growth in East Asian economies such as China, Indonesia, Thailand, and Korea. According to

Obayelu (2007), from 1992 to 2006, economic change was impeded by corruption. The study established a causal relationship between corruption and economic growth. They examined the impact of corruption on Nigeria's economic growth from 1986 to 2007. Engle-Granger cointegration and ECM were employed in the study. Corruption has a significant indirect effect on government capital investment, human capital development, and overall employment, the findings indicate.

In addition, Campos et al. (2010) used panel data to assess 460 empirical estimates of the impact of corruption on growth from 41 studies. According to their findings, around 32% of the estimates examined demonstrate a statistically significant negative impact of corruption on growth, whereas 62% show a statistically negligible link. The following is a summary of the authors' research findings: According to cross-country macro-econometric studies, trade openness and institutional quality appear to be major variables in minimising the consequences of corruption on growth. From 1996 through 2010, Fabayo, Posu, and Obisanya (2011) used ordinary least squares to investigate the impact of corruption on investment in Nigeria. According to the study, Nigeria's low corruption perception index rating leads to poor investment and, as a result, low economic growth.

Their study, which lasted from 1990 to 2009, examined corruption, foreign direct investment, and economic growth in Nigeria. It used the Granger causality test and the Ordinary Least Square Method to estimate FDI inflow, corruption index, exchange rate, inflation rate, and GDP. GDP, government spending, FDI, and gross fixed capital creation are all variables in the second model. The OLS analysis demonstrates a negative relationship between FDI inflows and corruption. That is, large inflows of FDI are associated with low levels of corruption in recipient nations. Exchange rate depreciation and inflation are significant determinants of FDI inflows. Additionally, FDI inflows and economic growth are significantly connected in Nigeria. Government spending, on the other hand, was inversely related to GDP. Adenike (2013) evaluated the economic impact of corruption in Nigeria. From 1980 to 2009, the study used regression analysis using the Granger causality test and the impulse response function. The researcher concluded that worker corruption reduces output per employee and, indirectly, foreign private investment, education, and capital expenditure per employee. Additionally, the study found a one-way causal relationship, with influence extending from output per worker to corruption. Between 1996 and 2012, Ibrahim, Umar, and Ajoke (2013) evaluated the relationship between corruption and economic success in Nigeria. Corruption, as revealed in the studies, is a hindrance to economic growth and progress. Muhuda (2013), on the other hand, examined the relationship between corruption, poverty, and growth. The data were analysed using regression analysis and the Granger causality test. The variables were found to be co-integrated. Additionally, the study discovered a causal relationship between corruption, poverty, and economic growth in Nigeria over the long run.

Shrabani and Rukmani (2013) conducted research on the variation in corruption across geographies and socioeconomic levels in the United States (high, middle, and low). Based on estimations using panel data from 1995 to 2004, we looked at 100 different countries. The relationship between real per capita GDP, higher education, and economic growth was shown to be negative and statistically significant. Corruption is exacerbated by factors such as unemployment, income disparity, and literacy rate. Rotimi and colleagues (2013) examined the relationship between corruption and economic growth in Nigeria from 1997 to 2012. They utilised OLS and granger causality to examine the relationship between corruption and economic growth. As a result, corruption has the effect of slowing economic advancement.

Corruption in Nigeria was studied by Akinpelu *et al* (2013), and in the work, vector error correction was used. Corrupt practises and social economic indicators are linked in Nigeria, the study revealed. Sunkanni and Isola (2014) studied Nigerian corruption and economic growth from 1990 to 2010. The study used estimate approaches like Johansen co-integration and Granger causality. The results showed that while there was no substantial association between corruption and economic growth, other variables including government expenditure, foreign direct investment, and gross capital creation did.

Nwankwo (2014) examined the impact of corruption on Nigerian economic growth from 1997 to 2010 using the cointegration test, granger causality test, and OLS method. The data indicated that there is a long-term relationship between corruption and economic growth in Nigeria. Corruption, the ECM concluded, has a deleterious effect on economic progress. This study corroborates Adewale's (2011) findings, in which he employed Error Correction Mechanisms to assess the crowding-out effect of corruption in Nigeria (ECM). According to the study, corruption in Nigeria stifles economic growth. From 1996 to 2016, James (2018) looked at the influence of corruption on Nigerian economic growth. To investigate the topic, the researchers used the ARDL bound test estimate approach. The research demonstrated that corruption had a considerable detrimental impact on economic growth

Nurudeen and Marcin (2019) looked into the factors that influence corruption in Nigeria from 1984 to 2016. The methodologies used in the study were ARDL, CCR, and FMOLS. The findings established a long-term association between corruption and the factors that contribute to it (economic development, political rights, military expenditure, rents, civil liberties, and openness). Additionally, the study indicated that economic development, political rights, military expenditure, rents, civil liberties, and openness are significant long-run predictors of corruption.

3. Methodology

3.1 Theoretical Framework

3.1.1 Barro Endogenous Growth Model

According to neoclassical growth theory, the accumulation of material inputs such as physical capital and labour is the determinant of long-term economic growth. Technical progress, which is classified as an exogenous element, was found to make a substantial contribution in studies. Among the first to illustrate this were Solow (1957) and Swan (1956). The Neoclassical Model is based on aggregate production functions with constant return to scale in labour and repeatable capital. $f = Y(K, L)$

Solow (1975) extended the preceding model by assuming that the aggregate production function contains a productivity (or technology) parameter A that reflects the current degree of technological knowledge. $f(KL) = Y$. The Solow-Swan Model's failure to account for the reason of technical advancement is an obvious flaw. The model demonstrates that technology advancement contributes to economic growth, but it does not explain how this occurs (The rate is set exogenously). Solow (1957) argued that technological change stemmed from information generated by a public science basis (e.g., researching public research institutes), which was outside the capitalist system's domain.

Recent work on endogenous growth theory has attempted to fill in the gaps in our understanding of long-term growth. This approach emphasises the need to continually offer greater resources to the labour force if production is to increase. Physical capital, human capital, knowledge capital (technology), and government policy are examples of such

resources. The study employs the well-known Barro endogenous growth model (1990), which is a derivative of Ram's (1986) model. This model provides as both a theoretical and analytical framework for analysing the impact of corruption on economic growth. The model presupposes a two-sector economy: public (G) and private (P). Due to the fact that public-sector infrastructure investment might boost private-sector profitability, it is assumed that (G) has some externalities on private-sector production. Additionally, the model assumes that the government collects income taxes and operates within a budgetary balance. Barro's endogenous growth model essentially asserts that the long-run growth rate of an economy is governed by policy variables such as government expenditure and taxation.

3.2 Model Specification

This study's model formulation was motivated by Aliyu and Elijah's (2008) which developed its theoretical underpinning from Barro growth theory. $GDP = f(GCE, TEM, TSE, COR)$ is Aliyu and Elijah's model, in which GDP stands for economic growth, TSE represents human capital, GCE is government capital expenditure, TEM is total employment, and COR represents corruption perception index. The model for this study is modified and different from the work of Aliyu and Elijah in that it divided government spending into recurring and capital spending. As a result, the following is the model for this research:

$$GDP = f(COR, GCE, GRE, TEM) \dots\dots\dots 3.1$$

In an explicit form:

$$GDP = \alpha_0 + \alpha_1 COR_t + \alpha_2 GCE_t + \alpha_3 GRE_t + \alpha_4 TEM_t + \mu_t \dots\dots\dots 3.2$$

Where:

GDP = Gross Domestic Product (a proxy for economic growth)

COR = Corruption Perception Index

GCE = Government Capital Expenditure

GRE = Government Recurrent Expenditure

TEM = Total Employment

α_0 = Intercept,

$\alpha_1 - \alpha_4$ = Parameter estimates and μ_t = Stochastic Variable.

A Priori Expectation

The a priori expectation of signs explains relationship between dependent and independent variable as stated below:

$\frac{\partial GDP}{\partial COR} < 0$: It is expected that a negative relationship will exist between Corruption and economic growth.

$\frac{\partial GDP}{\partial GCE} > 0$: It is expected that a positive relationship will exist between Government Capital Expenditure and economic growth.

$\frac{\partial GDP}{\partial GRE} > 0$: It is expected that a positive relationship will exist between Government Recurrent Expenditure and economic growth.

$\frac{\partial GDP}{\partial TEM} > 0$: It is expected that a positive relationship will also exist between Total Employment and economic growth.

3.3 Data Sources

Between 1995 and 2019, the study collected annual data on GDP as a proxy for economic growth, Government Capital Expenditure (GCE), and Government Recurrent Expenditure (GRE) from the Central Bank of Nigeria's (CBN) statistical bulletin, Total Employment (TM) from the World Bank Development Indicators, and Transparency International's Corruption Perception Index (COR).

4. Results and Discussion of Findings

4.1 Descriptive Statistics

Table 1 demonstrates how to use descriptive statistics to characterise the form of each data set in the study. For instance, the mean revealed that \ln GDP averaged N17.52 billion over time, COR averaged 20.46 percent, \ln GCE averaged N6.36 billion, \ln GRE averaged N7.16 billion, and \ln TEM averaged 17.68 18 workers. The skewness showed that the data for all the variables were negative meaning that they were negatively skewed to the left. They have their long tail to the left. Then the statistics for the kurtosis were all less than 3 and any Kurtosis value less than 3 but greater than 0 is called platykurtic distribution. So, all the variables exhibited platykurtic distribution in nature. This implies that there is absence of heterogeneity issues in the variables. The JB of each variable was greater than zero except \ln GCE with 0.550977 which was still greater than absolute zero, indicating that the data were not normally distributed.

Table 1: Descriptive Statistics

	LnGDP	Ln COR	LnGCE	lnGRE	lnTEM
Mean	17.52111	20.46400	6.361333	7.164785	17.68722
Median	17.57490	22.00000	6.482509	7.371030	17.71112
Maximum	18.08364	28.00000	7.735869	8.853293	17.96224
Minimum	16.82875	6.900000	4.796933	4.824236	17.41218
Std. Deviation	0.457262	6.565686	0.715963	1.235529	0.156217
Skewness	-0.220437	-0.639872	-0.221816	-0.628495	-0.183323
Kurtosis	1.514327	2.166312	2.423693	2.226217	1.961671
Jarque	2.501661	2.429979	0.550977	2.269546	1.263078
Probability	0.286267	0.296713	0.759201	0.321495	0.531773
Sum	438.0279	511.6000	159.0333	179.1196	442.1805
Sum sq. Dev.	5.018117	1034.598	12.30246	36.63674	0.585690
Observation	25	25	25	25	25

Source: Authors' Computation, 2021

4.2 Unit Root Test

The results of the unit root test for stationarity were presented in table 4.2 above. The results showed that none of the data was stationary at their level forms but they were made stationary at first difference. Based on the unit root results, the study now proceeded to examine the data for long run relationship by way of Johansen co-integration test as follows.

Table 2: Augmented Dickey-Fuller Unit Root Test Results

Variable	ADF @ level	ADF @ difference	1st 0.01 Critical value	Order of integration	Status of Variable
GDP	-0.628588	-4.046838	-3.752946	I (1)	Stationary
COR	-1.907373	-6.365987	-3.752946	I (1)	Stationary
GCE	0.928098	-9.639908	-3.776959	I (1)	Stationary
GRE	3.658262	-7.476300	-3.769597	I (1)	Stationary
TEM	0.431004	-4.701309	-3.788030	I (1)	Stationary

Source: Authors' Computation, 2021

4.3 Cointegration Test

The Johansen co-integration test was performed using the trace test and the maximum Eigenvalue test, with the results shown in tables 4.3a and 4.3b, respectively. The maximum eigenvalue test finds just one co-integrating equation, but the trace test reveals three co-integrating equation. This demonstrated that the Johansen test revealed a long-term link between the variables.

Table 3a: Johansen Co-integration Trace Test Results

Hypothesized CE(s)	No of Eigenvalue	Trace Statistic	0.05 Critical Value	Probability
None*	0.902868	109.336	69.8188	0.0000
At most 1*	0.654284	8	55.7080	0.0077
At most 2*	0.612872	7	31.2789	0.0335
At most 3	0.314382	0	9.45192	0.3252
At most 4	0.032964	9	0.77094	0.3799
		2	6	

Source: Authors' Computation, 2021

Table 3b: Johansen Co-integration Max-eigen value Test Results

Hypothesized CE(s)	No of Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Probability
None*	0.902868	53.6287	33.8768	0.0001
At most 1	0.654284	5	24.4291	0.1204
At most 2*	0.612872	7	21.8269	0.0399
At most 3	0.314382	8	8.68098	0.3137
At most 4	0.032964	7	0.77094	0.3799
		2	6	

Source: Authors' Computation, 2021

4.4 Fully Modified Ordinary Least Squares (FMOLS) Results

The results of Table 4.4 show that COR and TEM have significant positive associations with economic growth. GRE also has a favourable link with GDP as well; however, the relationship is statistically insignificant. The study's finding also revealed that GCE and

GDP have a substantial negative association.

Table 4: Fully Modified Ordinary Least Squares (FMOLS) Results

Variable	Coefficient	Std. Error	t-Statistic	Probability
COR	0.020946	0.006541	3.202513	0.0047
LnGCE	-0.210039	0.081495	-2.577328	0.0185
LnGRE	0.018587	0.089935	0.206677	0.8385
LnTEM	2.869704	0.872034	3.290818	0.0038
C	-32.44506	14.52688	-2.233450	0.0377
$R^2 = 0.966089$				
$Adj.R^2 = 0.958950$				

Source: Authors' Computation, 2021

4.5 Discussion of Findings

The data indicated that all variables were not stationary at their levels; they became stationary at their first difference. On the basis of this condition, the study advances to the Johansen Cointegration test, which revealed that long run relationships existed between the variables, corroborating Nwankwo's work (2014). The study also used the Fully Modified Ordinary Least Squares (FMOLS) technique, which found a statistically significant positive association between COR and GDP; this result is consistent with Rock and Bonett's findings (2004). The result also showed that there is negative relationship between GCE and GDP such that 1% increase in GCE led to 21% reduction in GDP. Apriori expectation of GCE was supposed to relate positively to GDP but the negative relationship here could be adduced to high level of corruption in government contract awards in which performances were not commensurate with contract amount. GRE coefficient is 0.018587 meaning that the study exhibited positive relationship between GDP and GRE which is in line with apriori expectation. This result showed that 1% increase in GRE led to 1.9% increase in GDP indicating that regular payment of salaries to workers boost GDP because workers would not go on strike but perform their assigned duties as expected. This is a pointer to the fact that government makes the welfare of her staff a top priority for economy to grow. Finally, TEM was positively related to GDP such that 1% increase in total employment led to 287% increase in GDP, this result is in line with the study of Aliyu and Elijah (2008). This means total employment contributed positively to GDP as expected, hence there is need to boost employment generation in Nigeria for further increase in GDP

5. Conclusion And Recommendations

Between 1995 and 2019, this study studied the influence of corruption on economic growth in Nigeria. The study indicated a substantial positive correlation between COR, TEM, and Gross Domestic Product. While GRE was positively correlated with GDP but it is statistically insignificant. Additionally, GCE was negatively correlated with GDP in Nigeria throughout the period under investigation. In line with these findings, the study recommended that the government should intensify efforts to reorient society away from corruption's ills by establishing high ethical standards to which everyone must adhere and that stolen and looted funds recovered from corrupt citizens should be used prudently for the benefit of all.

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