

Corruption and Domestic Investment Relationship in Nigeria: an Empirical Investigation

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Abstract

Although studies have made efforts to examine corruption-investment relationship, little has been done to examine the effect of corruption on domestic investment in Nigeria. This study examines the effect of corruption on domestic investment in Nigeria from 1996 to 2017 using quarterly data. Employing the Autoregressive Distributed Lag (ARDL) bounds testing approach, the result of the bounds testing to cointegration reveals that there is a long-run relationship between corruption and domestic investment along with domestic savings, lending interest rate, foreign direct investment and GDP growth rate. The results of estimation indicate that corruption has a significant and negative effect on domestic investment in Nigeria. Thus, an improvement in the corruption perception index CPI (lesser corruption) leads to an increase in domestic investment. The results also show that domestic savings, foreign direct investment and lending interest have positive significant effect on domestic investment. Based on these findings, this study recommends that government should employ policies that will encourage domestic investment via reducing corruption. These policies should be complemented with measures that promote domestic savings and FDI inflow, as well as reducing the lending rate.

Keywords: *Corruption, Domestic Investment, ARDL*

1.0 Introduction

Investment is one of the major determinants of sustainable long-term economic growth (Turnovsky, 2011). The International Monetary Fund (IMF, 2018) reported that the real Growth Rate of Fixed Capital Formation (GFCF) for emerging and developing economies was 5.9% of GDP. However, the growth rate of GFCF (% of GDP) for African countries is relatively low compared to emerging and developing economies. For example, the growth rate of GFCF for Uganda and South-Africa were 3.02% and 5.3%, respectively. In Nigeria, the growth rate of GFCF is accounted for 1.75% of GDP. This indicates the need for African countries, particularly Nigeria to invest more on human resources (health, education) and infrastructures (road, electricity etc) in order to achieve high growth rate of GFCF (IMF, 2018). In addition, domestic investment measured by GFCF plays a significant role in economic growth particularly in developing economies (Nigeria inclusive). A reduction in the widespread poverty and low GDP which is

a major feature of developing economies can be achieved through a sustained increase in domestic investment (Lucas, 1988; Romar, 1986). Moreover, increase in domestic investment is required to solve many challenges Nigeria is facing as a nation. The present administration is focusing on driving the priority sectors such as investment in agriculture and manufacturing sectors aimed to attract domestic investment in the country.

Despite efforts put in place to encourage domestic investment, Nigeria's domestic investment stood at 12.93% of GDP in 2018, a value far below the world's average investment level (22.32%) in 2018. With this value, Nigeria ranked 131 in the world, in terms of investment share to GDP. This reveals that investment in Nigeria still remains low compared to some of the African countries (World Development Indicator [WDI], 2018). Whereas, rising domestic investment is very important, but corruption is on factor that can be an impediment to growth in investment in Nigeria. Mauro (1995) opined that corruption reduces the level of investment, due to stealing of funds/money that are meant for achieving high investment growth. Also, corruption affects both public and private finances, businesses, investment as well as the standard of living (Asiedu & Freeman, 2009; Mo, 2001). In same vein, several authors have argued that Nigeria is currently among the countries with an increase in corruption, nepotism, bad Governance, political instability and legitimate crisis that can hinder the growth of investment (Abu, 2015; William, 2016).

The Transparency International (TI) shows the corruption perception index (CPI) for Nigeria from 1996 to date. For instance, between 2001 and 2002, the nation was ranked second-most corrupt nation in the world, out of 91 and 102 countries and scored a point of 1 and 1.6 respectively. Therefore, corruption in Nigeria is still very high, even higher than some of the African countries. For instance, in 2016, the score of Burkina Faso and Ghana was 4.2 and 4.3, while their ranking was 72 and 70, respectively. Nigeria's CPI in the same year was 2.7, and its ranking was 136 (TI, 2017). Moreover, the Economic and Financial Crime Commission (EFCC) and Independent Corrupt Practices and other offences crime Commission (ICPC) in 2016, reported that several allegations of corruption cases have emanated in Nigeria over the years, which can affect the growth and development of every sector in the country. Recently, Abu and Stainiewsk (2019) confirmed that corruption exists in every sector of the Nigerian economy including oil, manufacturing and financial sector, as well as the various arms of government which can affect investment.

The foregoing discussion suggests that domestic investment has been low, while corruption remained high in Nigeria. Given the high level of corruption and low investment share to GDP in Nigeria, it is possible that corruption is responsible for the poor domestic investment in Nigeria. The studies of corruption and domestic investment relationship in Nigeria have been ignored, due to shortage coverage of data particularly on corruption, which is available only from the year 1996 to date. To our knowledge, empirical study of corruption and domestic investment relationship in Nigeria is scanty. Thus, this study evaluates the effect of corruption on domestic investment particularly in Nigeria using an autoregressive distributed lag (ARDL) bounds testing approach.

The remaining part of the paper includes the following; next section presents the review of empirical literature. Theoretical framework and model specification employed is discussed in section three. Section four discusses the empirical results and findings. Lastly, is the final section which consists of conclusion and recommendation.

2.0 Literature Review on Corruption and Domestic Investment

There is an abundance empirical literature on corruption and domestic investment relationship. For instance, Tripathi and Kumar (2014) analyzed the effect of corruption on domestic investment in 90 less developed and emerging economies from 2002 to 2010. Using a panel chi-squared Tobit method, the results reveal that corruption and domestic investment are negatively correlated. Similarly, Das and Parry (2011) examined corruption and investment relationship in 74 developing countries over the period 2000-2008. They employed Generalized Method of Moments (GMM) technique, and the results demonstrate that the impact of corruption on domestic investment is strongly positive in the developing countries. In the same vein, Everhart, Vasquez, and McNab (2009) examined corruption and domestic investment relationship for over 100 countries during the 1984-2008 period. The pooled OLS technique was applied, and the results demonstrate that corruption negatively affects domestic investment. Asiedu and Freeman (2009) analyzed the relationship between corruption and investment in Sub-Saharan African (SSA) countries using a panel regression approach from 1984 to 2006. The results reveal that corruption has insignificant impact on growth of investment in SSA. Balamoune-Lutz and Ndkumana (2008) employed GMM estimation technique to assess the effect of corruption on domestic investment for a sample of 33 African

countries from 1982 to 2001. The study reveals that corruption has a negative and significant effect on domestic investment.

In addition, Haque and Kneller (2008) assessed the effect of corruption on domestic investment in 10 SSA countries during the period 1970-1999. Using Three-Stages Least Squares (3SLS) method, the results indicate that corruption reduces domestic investment and makes it ineffective. Dal-Bo and Rossi (2007) investigated corruption-investment nexus in 13 Latin American countries from 1994 to 2001 by employing pooled OLS and dynamic panel estimations techniques. The empirical findings demonstrate that corruption strongly affects the level of public and private investment in the countries. Similarly, Folorunso (2007) evaluated the effect of corruption on private investment using quarterly data for 8 African countries. The OLS was employed to analyze the data from 1995 to 2005. The results reveal that corruption reduces domestic investment in the countries. In addition, Javorcik and Wei (2006) examined the effect of corruption on public investment during the period 1996-2001. The study employed 3SL method in 64 countries, the results illustrate that corruption distorts public investment in the countries. Furthermore, Meon and Sekkat (2005) investigated corruption-investment nexus in 63 countries from 1970 to 1998. Using the Generalized Least Square (GLS) technique, the results show that corruption has a negative effect on investment growth. Also, Pellegrini and Gerlagh (2004) investigated the effect of corruption on investment by applying two-stage least square (2SLS) estimation in 20 OECD countries from 1975 to 1985. The result demonstrates that corruption negatively affect investment.

Tanzi and Davoodi (2002) examined the effect of corruption, public investment and growth among the OECD countries between 1980 and 1995, by employing the GMM and 3SLS methods. The results reveal that corruption reduced public investment by lowering government revenue needed to finance productive spending. In addition, Wei (2001) evaluated the effect of corruption on domestic investment in 22 European transition economies during 1980-1985 period. Using regression approach, the results demonstrate that corruption has positive effect on domestic investment in the countries. Moreover, Javorcik and Wei (2001) evaluated the effect of corruption on domestic investment in emerging economies during the period 1989-1995. By employing Single-equation Probit approach, the results illustrate that corruption reduces domestic investment in developing countries.

Numerous studies conducted on corruption and investment relationship have been done at cross-country or panel studies, while few studies have looked at the issue at individual country's level. Examples of the studies conducted on corruption-investment nexus at country specific include Fabayo (2011), Dartanto (2010) and Folorunso (2007). For instance, Fabayo (2011) examined the effect of corruption on investment climate in Nigeria from 1996 to 2010. The study employed Ordinary Least Square (OLS) technique, and the results indicate that high level of corruption leads to low investment in Nigeria. Also, Dartanto (2010) employed pooled OLS method to evaluate the relationship between corruption and public investment in Indonesia during the period 2004-2006. The results indicate that corruption negatively affects public investment. Moreover, most of the studies conducted on the relationship between corruption and investment at country specific have small sample size (less than 30 observations), which might invalidate the results, because of shortage coverage of their studies.

3.0 Theoretical Framework and the Model

Numerous investment theories have been used in the studies in explaining the investment and its determinants. Some of the theories include the principle accelerator and the flexible accelerator models. For instance, the principle accelerator theory assumes that capital stock (investment) has no time lag in the adjustment process. But Flexible accelerator argued that investment has time lags in the adjustment process between the investment (K) and the level of output (Y). In this regard, this study accepts the flexible accelerator investment model for the same reasons. Following the work of Folorunso (2007) and Le (2014), we assume that capital stock (investment) at time t is determined by the previous output levels (Y). Thus, this implies as;

$$K^* = \sigma Y \quad 3.1$$

Where Y is the level of output, K is the fixed capital, and σ is the Greek letter sigma representing capital/output ratio. Giving rise to

$$I_t^n = \sum_t Y_i (K_{t-1}^* - K_{t-i-1}) \quad 3.2$$

For the investment model, this implies that It has been stated earlier from the theory

$$I_t^n = \delta \sum_t \gamma_i (\Delta Y_{t-1}) \quad 3.3$$

(flexible accelerator) that investment is dependent on output. Thus, investment responds slowly over time to changes in output.

3.1 Methodology

Several authors hypothesized that corruption influences investment growth (see Mauro, 1995; Wei, 2001). Therefore, in line with the work of Ndikumana (2003) and Mofrad (2012), the model (3.3) was modified into an investment model that includes the interest variable (corruption). Beside the interest variable (corruption), other variables such as (lending interest rate, domestic savings and foreign direct investment) were included in the investment model (see Mofrad, 2012). Taking all the variables into account, the general investment model is given as:

$$DINV_t = f(COR_t, GDPGR_t, LIRT_t, DS_t, FDI_t, \mu_t) \quad 3.4$$

Where; Domestic investment (DINV) is the dependent variable. It refers to gross fixed capital formation (GFCF) plus net changes in the level of inventories. Economic growth is captured by the GDP per capita growth rate (GDPGR) which is gross domestic product divided by midyear population. In addition, Domestic Savings (DS) refers to gross national savings as a % of GDP. Lending Interest Rate (LIRT) is the bank rate that usually meets the short- and medium-term financing needs of the private sector. Lastly, Foreign Direct Investment (FDI) refers to net inflows of investment to acquire a lasting management interest (10 % or more of voting stock) in an enterprise operating in an economy, other than that of the investor. The data for variables such as DINV, GDPGR, DS, LIRT and FDI were collected from WDI (2017). Lastly, the data for corruption were obtained from TI (2017).

3.2 Model Specification

A specific model in which domestic investment is dependent on corruption and other variables is specified as follows;

$$DINV_t = \beta_0 + \beta_1 GDPGR_t + \beta_2 LIRT_t + \beta_3 COR_t + \beta_4 DS_t + \beta_5 FDI_t + \mu_t \quad 3.5$$

Where; β_0 is the constant or intercept, while $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are parameters. Lastly, μ_t is the error term.

It is important to state here that, a major constraint of a study of this nature (corruption and investment) is getting annual data for considerable number of years (i.e. 30 or above). For instance, the data on variable such as (corruption) is available for Nigeria only from the year 1996 to date. This might explain why researchers have paid less attention to corruption-investment nexus in Nigeria. Therefore, to solve the problem of shortage coverage of data in this study (particularly on

corruption), the annual time series data were first converted to quarterly data using Gandolfo's techniques of data interpolation. Gandolfo (1981) suggested that converting annual data to quarterly data gives a high number of observations. Thus, employing Gandolfo's techniques of data interpolation, this study left with the quarterly data - 1996:Q1 to 2017:Q4 (T=76). Previous empirical studies employed this method to solve the problem of shortage coverage of data (Tang, 2008).

This study employed an ARDL bounds testing approach to examine the effect of corruption on domestic investment in Nigeria from 1996 to 2017, using quarterly data. The ARDL method is employed, because of its advantages over other techniques which include estimating the long-run and short-run components of the model simultaneously, solving the endogeneity problems, omitted variables, and or serial correlation (Pesaran, Shin, & Smith, 2001). Moreover, the ARDL method can be employed to examine cointegration relationship and to ascertain the order of integration of the series are I(0), I(1) or combination of both (Abu, 2017; Abubakar & Kassin, 2016). Therefore, investment model is tested, using ARDL bounds testing approach. Thus, the ARDL model is specified as:

$$\begin{aligned} \Delta(\ln DINV)_t = & \beta_0 + \sum_{i=1}^p \beta_1 \Delta(\ln DINV)_{t-i} + \sum_{i=0}^k \beta_2 \Delta(COR)_{t-i} + \sum_{i=0}^l \beta_3 \Delta(LIRT)_{t-i} \\ & + \sum_{i=0}^m \beta_4 \Delta(\ln DS)_{t-i} + \sum_{i=0}^n \beta_5 \Delta(\ln FDI)_{t-i} + \sum_{i=0}^r \beta_6 \Delta(GDPGR)_{t-i} + \delta_1 (\ln DINV)_{t-1} \\ & + \delta_2 COR_{t-1} + \delta_3 (LIRT)_{t-1} + \delta_4 (\ln DS)_{t-1} + \delta_5 (\ln FDI)_{t-1} + \delta_6 (GDPGR)_{t-1} + \varepsilon_t \end{aligned} \quad 3.6$$

Where; LIRT and GDPGR are in rate, the remaining variables are in natural logarithm, and Δ is the first different operator. The symbols $p, k, l, m, n,$ and r are the optimal lag lengths determined by AIC criterion, and \ln denotes logarithm. Upon confirming the cointegration relationship between the variables, long-run model is estimated using the equation specified as:

$$\begin{aligned} \ln DINV_t = & \beta_0 + \sum_{i=1}^p \beta_1 \ln DINV_{t-i} + \sum_{i=0}^k \beta_2 COR_{t-i} + \sum_{i=0}^l \beta_3 LIRT_{t-i} \\ & + \sum_{i=0}^m \beta_4 \ln DS_{t-i} + \sum_{i=0}^n \beta_5 \ln FDI_{t-i} + \sum_{i=0}^r \beta_6 GDPGR_{t-i} + \varepsilon_t \end{aligned} \quad 3.7$$

Moreover, in order to get the short-run coefficients, an Error Correction Model (ECM) is estimated. The ARDL specification of the ECM is represented as:

$$\begin{aligned} \Delta(\ln DINV)_t = & \beta_0 + \sum_{i=1}^p \beta_1 \Delta(\ln DINV)_{t-i} + \sum_{i=0}^k \beta_2 \Delta(COR)_{t-i} + \sum_{i=0}^l \beta_3 \Delta(LIRT)_{t-i} \\ & + \sum_{i=0}^m \beta_4 \Delta(\ln DS)_{t-i} + \sum_{i=0}^n \beta_5 \Delta(\ln FDI)_{t-i} + \sum_{i=0}^r \beta_6 \Delta(GDPDR)_{t-i} + \phi ECT_{t-1} \\ & + \mu_t \end{aligned} \quad \text{--- 3.8}$$

Moreover, ECT is the error-correction term. ECT_{t-1} is the one period lag of the error-correction term, and the statistical significance of the ECT_{t-1} is used to determine the long-term relationship.

4.0 Result and Discussion

Prior to estimating the ARDL model, the unit root test is conducted to examine the existence of a second order integration I(2) of any series (variable) employed in the estimation which can invalidate the use of the model. In conducting the unit root tests, the Augmented Dickey- Fuller (ADF) and Phillips-Perron (PP) tests were employed. The results of the unit root tests in Table 1 reveal that most of the variables have unit root at their level, I(0), which means they are not stationary. But the unit root in the variables (lnDINV, COR, LIRT, lnDS and lnFDI) were eliminated and became stationary after first differencing, and they are integrated of order one, I(1). The only exception is in the case of GDP growth rate which is found to have no unit root at level both in the ADF and PP Tests and therefore, integrated of order zero [I(0)]. Thus, the mixed order of integration of the variables indicates a strong evidence for the employment of the ARDL model in this study.

Table 1: Results of Unit Root Test

Variables	ADF Test		PP Test		Stationary
	Level	First Difference	Level	First Status	
lnDINV	-0.94	-4.60***	-0.71	-4.68***	I(1)
COR	-0.72	-3.44**	-1.00	-5.25***	I(1)
LIRT	-1.34	-4.17***	-1.14	-4.18***	I(1)
lnDS	-1.67	-5.77***	-1.80	-3.12**	I(1)
lnFDI	-1.05	-9.13***	-1.58	-2.80*	I(1)
GDPGR	-2.68*		-2.79*		I(0)

Source: Author’s computation (2018). **Note:*****, ** and * denote significance at 1%, 5% and 10% respectively.

4.1 Result of Bounds Testing to Cointegration

The ARDL bounds testing to cointegration was used to examine the existence of a long-run relationship between the variables. The result of the cointegration test is presented in Table 2 illustrates that the calculated F-statistic (6.7044) is greater than the upper critical bounds at the 1% level. This indicates that there is a long-run relationship between the variables.

Table 2: Result of Bounds Test to Cointegration

Dependent variable	Function						F-Statistic
lnDINV	f(lnDINV/ COR, LIRT, lnDS, lnFDI, GDPGR)						6.7044***
Critical values bounds							
	10%		5%		2.5%		1%
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)
I(1)	2.08	3.00	2.39	3.38	2.7	3.73	3.06
	4.15						

Source: Author’s calculation (2018). *** denotes statistical significance at 1% level, and critical bounds (n = 76; k = 5).

Giving the confirmation of cointegration relationship between the variables, this study proceeded to estimate the relationship between the variables.

4.2 Results of Selected Long-run and Short-run Models

Since the long-run relationship between the variables had been established, the ARDL model was estimated. The optimal lag-length for the variables is (2, 4, 1, 1, 3, 4) as suggested by Akaike Information Criterion (AIC). The results of the long-run and short-run for the models are presented in Table 3. For example, the results reveal that reducing corruption has a significant and positive effect on domestic investment in the long-run. A 1 unit increase in the corruption index (decrease in corruption) increases domestic investment by 0.93% in the long-run. However, corruption has an insignificant effect in the short-run. Thus, lowering corruption promotes domestic investment in Nigeria, in the long-run. This finding is consistent with previous studies that reducing corruption increases the level of investment growth in Nigeria (see Folorunso, 2007; Fabayo, 2011). In addition, the outcome is consistent with the works of Mauro (1995), Mo (2000) and Javorcik and Wei (2002). Therefore, reducing corruption encourages both private and public sectors and enhances investment growth, since businesses do not have to pay bribes to government officials to collect permit and license for contracts, including registration of their business (Abu, 2015).

The results also reveal that lending interest rate has a significant and positive effect on domestic investment, both in the short-run and the long-run at 1% level. An increase in the lending rate by 1% raises domestic investment by 0.7% both in the long-run and the short-run, respectively. This finding is in line with the outcome of previous studies, that high lending rate positively affects domestic investment in some developing countries (Afonso & Aubyn, 2008). Another discovery from the estimation results is that domestic savings has a significant and positive effect on domestic investment in the long-run, at 1% level. A 1% raises in domestic savings increase domestic investment by 0.25% in the long-run. The result lends support to the claim that saving positively influences domestic investment (Bader & Malawi, 2009).

Table 3: Result of ARDL model

Panel A: Long-run Coefficients – dependent variable is lnDINV			
Regressor	Coefficient	Standard Error	T-Ratio
C	5.0427	0.2796	18.034
0.0000***			
COR	0.9345	0.1045	8.9344
0.0000***			
LIRT	0.0679	0.0136	4.9842
0.0000***			
GDPGR	-0.0002	0.0033	-0.0791
0.9372			
lnDS	0.2515	0.0488	5.1443
0.0000***			
lnFDI	0.2909	0.1449	2.0078
0.0496**			
Panel B: Short-run Coefficients – dependent variable is Δ lnDINV			
Δ COR	0.0700	0.0683	1.0242
0.3102			
Δ COR _{t-1}	-0.1244	0.0772	-1.6111
0.1129			
Δ COR _{t-2}	-0.1752	0.0739	-2.3708
0.0213**			
Δ COR _{t-3}	-0.2124	0.0739	-2.8725
0.0058***			
Δ LIRT	0.0679	0.0114	5.9385
0.0000***			
Δ GDPGR	0.0038	0.0016	2.3592
0.0219**			
Δ lnDS	-0.0333	0.0392	-0.8506
0.3987			
Δ lnDS _{t-1}	-0.0700	0.0379	-1.8470
0.0701*			
Δ lnDS _{t-2}	-0.0542	0.0344	-1.5749
0.1210			
Δ lnFDI	-0.0453	0.0497	-0.9129
0.3652			

$\Delta \ln \text{FDI}_{t-1}$	-0.1257	0.0560	-2.2429
0.0289**			
$\Delta \ln \text{FDI}_{t-2}$	-0.1302	0.0547	-2.3791
0.0208**			
$\Delta \ln \text{FDI}_{t-3}$	-0.1655	0.0551	-3.0034
0.0040***			
ECT_{t-1}	-0.3304	0.0458	-7.2146
0.0000***			
R-squared	0.7018		
F-statistic	6.7044		0.0000***

Source: Author's calculation (2018). Δ is the first difference operator. **Note:*****, ** and * denote significance at 1%, 5% and 10% respectively.

Additionally, foreign direct investment has a negative and insignificant effect on domestic investment in the short-run, while the effect is positive and significant in the long-run. A 1% increase in FDI leads to a 0.29% increase in domestic investment at 5% level in the long-run. The result is consistent with previous studies conducted by Ang (2009) and Harding and Javorcik, (2011), that FDI has a positive impact on domestic investment. Moreover, GDP growth rate was found to have a significant and positive relationship with domestic investment in the short-run. An increase in GDP growth rate by 1% raises domestic investment by 0.0038% in the short-run at 5% level. The result is consistent with previous studies that GDP growth rate has significant and positive relationship with domestic investment (Adam, 2009; Merican, 2009).

The F-statistic (6.7044) reveals that the coefficients of independent variables are jointly significant and are capable of influencing domestic investment at 1% level. In addition, the R^2 reveals that all the explanatory variables account for approximately 70% variation in the model. The one-lagged error correction terms (ECT_{t-1}) is negative and statistically significant, which shows the adjustment from the short-run leading to the long-run. In addition, the result from the estimation meets our expectation, since the coefficient of ECT_{t-1} is negative and significant at 1%, This result indicates that 33.04% deviations of domestic investment from the equilibrium will be corrected within the first quarter of the year.

4.4 Results of Diagnostic Tests

This study conducted the diagnostic tests to ascertain the reliability and/or validity of the results generated. First, the results indicate that the error terms are homoscedastic, and there is no problem of serial correlation, since the probability values are statistically significant at 0.23% and 0.99%, respectively. Also, the study confirmed there are no omitted variables and the ARDL model is specified correctly. Lastly, the result reveals that the error terms are normally distributed (see Table 4).

Table 4: ARDL-ECM Model-Estimation Tests

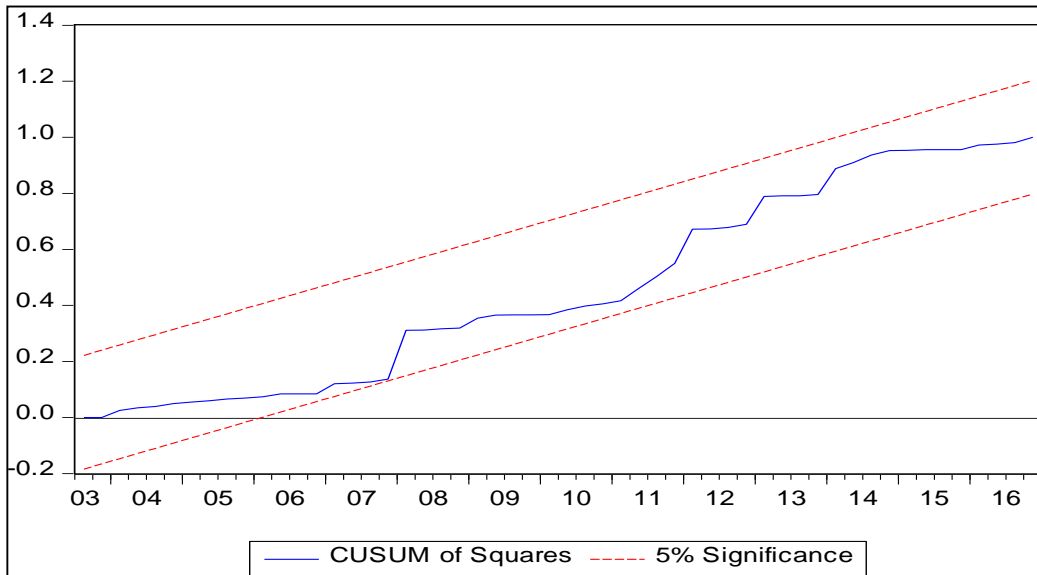
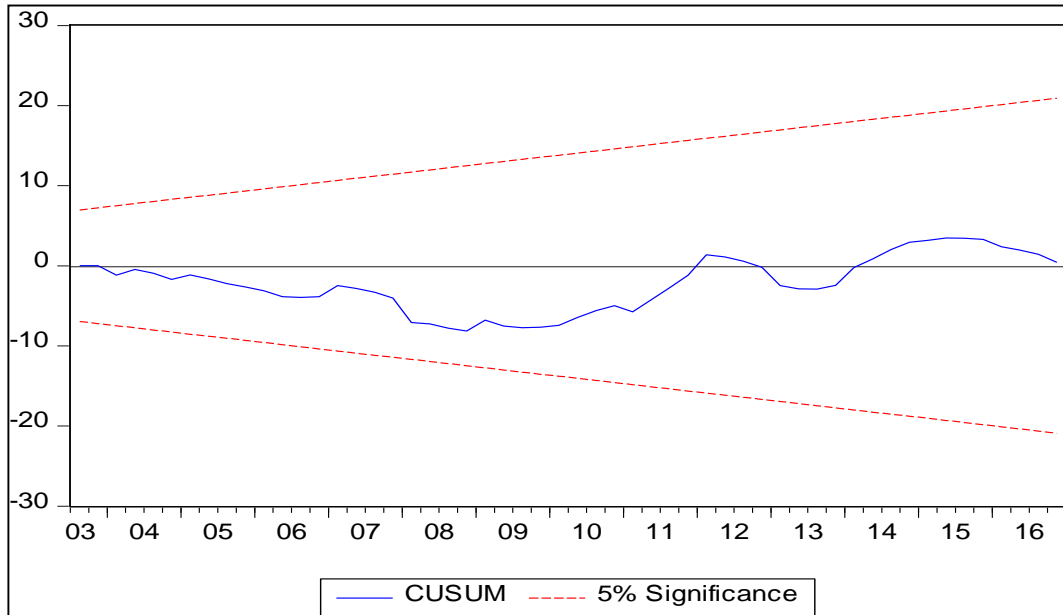
Test statistic	Results
Serial Correlation: Breuch-Pegan LM CHSQ(2)	1.0439[0.2369]
Functional Form: Ramsey Reset F-stat (1, 54)	0.1234[0.7267]
Normality: Jarque-Bera	4.3636[0.1128]
Breuch-Pegan Hetroscedasticity: CHSQ(20)	0.4086[0.9942]

Source: Author's calculation (2018).

4.5 Results of Stability Test

The cumulative sum of recursive residuals (CUSUM) and cumulative sum of square of recursive residuals (CUSUMQ) tests were conducted. The plots of both CUSUM and CUSUMQ are within the boundaries (see Figure 1 and Figure 2). Generally, the estimated parameters are stable in the long-run.

Figure 1: Plot of cumulative sum of recursive residuals



5.0 Conclusion

Domestic investment in Nigeria has been low, while corruption remained high. This study evaluates corruption-domestic investment nexus in Nigeria during the period of 1996-2017, using quarterly time series data. The ARDL bounds approach is applied, and the empirical results reveal that corruption influences domestic investment in Nigeria. That is, lesser corruption increases domestic investment and vice versa. Having established that corruption influences domestic investment in Nigeria, this study recommends that government should employ policies that will reduce corruption, in order to raise domestic investment in Nigeria. In particular, government can sustain the fight against corruption via increased funding of the anti-graft agencies. Second, government should continue seeking for the cooperation of international community, particularly countries where Nigeria's stolen wealth are kept, with a view of recovering these funds and invest in to the country. These should be complimented with proper funding and strengthen of the judiciary to dispense justice and ensure that corrupt individuals are sanctioned accordingly.

Reference:

- Abu, N.(2017). Does Okun's law exist in Nigeria? Evidence from ARDL bounds testing approach. *Contemporary Economics*, 11(2), 131-144.
- Abu, N. (2015). Effect of corruption and political instability on savings. *Journal of Economic Cooperation and Development*, 36(2), 6390.
- Abu, N., & Staniewsk, M. W. (2019). Determinants of corruption in Nigeria: Evidence from various estimation techniques. *Economic Research-Ekonomisika Instrazivanja*, 32(1), 3052-3076.
- Abu, N., & Abd Karim, M. Z. (2015). The causal relationships among corruption, political instability, economic development and foreign aid: Evidence from the economic community of West African states. *Journal of Applied Economic Sciences*, 10(31), 20-33.
- Abubakar, A., & Kassim, S. (2016). Sectoral impact of bank credit in Malaysia: ARDL modeing approach. *Pertanika Journal of Social Science and Humanities*, 24, 205-211.
- Adams, S. (2009). Foreign direct investment, domestic investment, and economic growth in Sub-Saharan Africa. *Journal of Policy Modeling*, 31(4), 939-949.
- Ang, J. B. (2007). Are saving and investment cointegrated? The case of Malaysia (1965–2003). *Applied Economics*, 39(17), 2167-2174.

- Asiedu, E., & Freeman, J. (2009). The effect of corruption on investment growth: evidence from firms in Latin America, Sub-Saharan Africa, and transition countries. *Review of Development Economics*, 13(46), 200-214.
- Bader, M., & Malawi, A. I. (2010). The impact of interest rate on investment in Jordan: a cointegration analysis. *Journal of Economics and Administration*, 23(26), 461-476.
- Balioune-Lutz, M., & Ndkumana, L. (2008). Corruption and growth: Exploring the investment channel. *Journal of Economics Development*, 33(4), 45-62.
- Dartanto, T. (2010). The relationship between corruption and public investment at the municipalities level in Indonesia. *Journal of International Monetary and Finance*, 26(4), 546-569.
- Das, A., & Parry, M. (2011). greasing or sanding? GMM estimation of the corruption-investment relationship. *International Journal of Economics Research*, 2(2), 91-108
- Davis, O. (2015). Impact of interest rate on investment in Nigeria. *Journal of Developing Country Studies*, 41(54), 166-219.
- Everhart, S. S., Vasquez, J. M., & McNab, R. M. (2009). Corruption, governance, investment and growth in emerging markets. *Journal of Applied Economics*, 13(9), 1579-1594.
- Fabayo, J. A. (2011). Corruption and the investment climate in Nigeria, *Journal of Economics and Sustainable Development*, 23(30), 233-248.
- Folorunso, B. A. (2007). Determinants and effects of corruption on investment, general price level and sustainable economic growth in Nigeria. *African Economic and Business Review*, 4(45), 10-25.
- Tang, C. (2008). Electricity consumption, income, foreign direct investment, and population in Malaysia: New evidence from multivariate framework analysis. *Journal of Economic Studies*, 36(4), 371-382.
- FRN (2017). Independent Corrupt Practices and Other related Offences commission Act.
- FRN (2017). Economic and Financial Crimes Commission Establishment Act.
- Gandolfo, G. (1981). Quantitative analysis and econometric estimation of continuous time dynamic. *North-Holland, Amsterdam*.
- Harding, T., & Javorcik, B. S. (2012). Foreign direct investment and export upgrading. *Review of Economics and Statistics*, 94(6), 964-980.
- International Monetary Fund (2017). Annual Statistical Bulletin
- Javorcik, B. S., & Wei, S. J. (2009). Corruption and cross-border investment in emerging markets: Firm-level evidence. *Journal of International Monetary and Finance*, 28(4), 605-624.

- Khan, M. S., & Kumar, M. S. (1997). Public and private investment and the growth process in developing countries. *Oxford Bulletin of Economics and Statistics*, 59(1), 69-88.
- Mauro, P. (1995). Corruption and growth. Measuring corruption in Africa: the international dimension matters, African governance report IV 16-27. *The Quarterly Journal of Economics*, 110(3), 681-712.
- Merican, Y. (2009). Foreign direct investment and growth in ASEAN-4 nations. *International Journal of Business and Management*, 4(5), 46-61.
- Mo, P. H. (2001). Corruption and economic growth. Contemporary middle eastern issues *Journal of Comparative Economics*, 3, 117-135.
- Mofrad, M. A. (2012). The relationships between GDP, export and investment: case study Iran. *Business Intelligence Journal*, 19(18), 423-475.
- Ndikumana, L. (2005). Financial development, financial structure, and domestic investment: International evidence. *Journal of Money and Finance*, 24(4), 651-673.
- Nigeria Bureau of statistic (2018). Annual Statistical Report.
- Pesaran, M. H., Shin, Y., & Smith R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(31), 289-326.
- Tang, C. F. (2008). A re-examination the relationship between the electricity consumption and economic growth in Malaysia. *Journal of Energy Policy*, 36(45), 3077-3085.
- Tanzi, V. (1998). Corruption around the world: causes, consequences, scope and curses. *IMF*, 63 (245), 265-286.
- Tanzi, V., & Davoodi, H.R. (2002), Corruption, public investment, and growth. *Journal of Governance, Corruption, and Economic Performance*, 12(45), 567-581.
- Transparency international (2017).
- Turnovsky, S. J. (2011). Capital accumulation and economic growth in a small open economy. Cambridge Book (2011).
- Wei, S. (2000). How taxing is corruption on international investors? *Review of Economics and Statistics*, 82(1), 1-24.
- Williams, A. (2016). Corruption and the Nigeria external reserves management. *International Journal of Economics & Management Sciences*, 54(43) 22-55.
- World Bank (2018). World Development Indicator.