

1 **DIRECT AND REVERSE CAUSATION OF EXTERNAL DEBT, FOREIGN**
2 **INVESTMENT AND ECONOMIC GROWTH IN NIGERIA, 1980-2017**

3 **ABSTARCT**

4 *This study examined the direct and reverse relationship among external debt, foreign investment*
5 *and economic growth in Nigeria, 1980-2017. The major objective was to analyze the causal*
6 *relationship between the dependent variable RGDP and the explanatory variables which include*
7 *external debt, foreign direct investment and exchange rate. The study adopted the autoregressive*
8 *distributed lag (ARDL) and breakpoint consistent unit root test Granger causality test, bound co-*
9 *integration test approach and error correction representations. Focusing on the short run*
10 *relationship, it was found that external debt and exchange rate and their following lags were*
11 *significant functions while FDI and its lag were insignificant functions of real gross domestic*
12 *product at 5% significant level. In the bound test following the ARDL, there was evidence in favor*
13 *of co-integration among the variables regardless of whether they are stationary or not given that*
14 *the observed test statistic exceeds the upper critical band. The results imply the presence of co-*
15 *integration of long run equilibrium relationships among the variables of interest. The error*
16 *correction term of 30.40% is negative and statistically significant. The negative value shows that*
17 *there exists an adjustment speed of 60.60% from short-run disequilibrium towards the long-run*
18 *equilibrium. By this, there is an indication that it takes about 3.28 years to restore the long-run*
19 *equilibrium state on the real gross domestic product should there be any shock from the*
20 *explanatory variables. It was recommended among others that government should curb insurgency*
21 *and insecurity in the nation to create an environment that will attract foreign investors leading to*
22 *increase in the volume of foreign inflows into Nigeria; and also reduce their rate of borrowing and*
23 *channel the borrowed ones into viable project that will guarantee positive return on investment.*
24 *This will play a catalytic role for boosting the economic growth in Nigeria.*

25 **Keywords:** External Debt; Foreign Investment; Causality Test; Nigeria; ARDL

26

27 **1. Introduction**

28 It is difficult for a developing country to support itself with only domestic financial resources
29 because these resources are limited. The dual gap theory identifies the need for financial resources
30 from foreign sources to augment available limited domestic financial resources as to achieve
31 sustainable economic growth in a country especially for a developing country. Hence, countries with
32 inadequate resources to handle a fiscal vacuum created by proposed expenditure and expected
33 revenue within a fiscal year; and low capital formation always resort to borrowing externally from
34 foreign countries to supplement their domestic savings (Ogumuyiwa, 2011; Aluko &
35 Arowolo, 2010; Ezeabisi, 2006 and Nwachukwu, 2017).

36 Many countries in the world do borrow for many reasons among which include to finance various
37 sectors of their economies especially industry, energy, transport and communication, education and
38 agriculture among others which results in external debts. Soludo, (2003) noted that a country can
39 borrow for macro- economic reasons which include to finance high level of consumption and
40 investment; or, to finance balance of payment deficit in order to avoid budget constraints and to
41 boost the economy. Also, Jilenga, Helian and Gondje-Dacka (2016) noted that Tanzania, for some
42 good reasons has borrowed and has been borrowing funds to finance some projects due to budget
43 deficit or having low investment in the country on condition to repay the loan within a specific
44 period of time.

45 There is no agreement among researchers on the appropriate effect of external debt on the economic
46 growth of a country particularly in Nigeria. To Gana (2002) external borrowing is advantageous
47 and necessary to increase the pace of economic growth as long as they are channeled to increase the
48 economic productivity. Bolanle, Oladapo, Aluko (2015) are of the opinion that external debt and
49 foreign direct investment (FDI) are required by developing nations like Nigeria to attain the
50 economic status that will improve the standard of the living and increase the per capita income of
51 the people as well to compete globally. Other researchers like Atique and Malik (2012); Meng and
52 Sumaria (2013) believe that accumulation of external borrowing has a significant impact on the
53 growth and investment of a nation up to a point where high levels of external debt servicing sets in
54 and the willingness of investors to provide capital starts deteriorating. Whereas, Pattilo, Poirson and
55 Ricci (2012) noted that low levels of external borrowing is preferable because it has positive effects
56 on growth to a particular point or threshold above which accumulated debt begins to have a
57 negative impact on growth.

58 The genesis of Nigeria's debt can be traced to 1958 when 28 million US dollar was contracted from
59 the World Bank for the construction of railways. Following the fall in oil price in 1978 which
60 exerted a negative influential shock on government finances, the debt profile of the nation started
61 increasing. The debt of \$69.7 million in 1960 to US 246.0 Million in 1970 (Obadan, 2004) was
62 followed up with the first major borrowing of 1 billion US dollar referred to as the "jumbo loan"
63 contracted from the International Capital Market (ICM) in 1978 (Adesola, 2009). The debt profile
64 increased to US\$9 billion in 1980, and stood at US\$19 billion in 1985. In 1986, Nigeria had to
65 adopt a World Bank and International Monetary Fund (IMF) sponsored Structural Adjustment
66 Program (SAP), with a view to reviving the economy, making the country better-able to service her
67 debt (Ayadi and Ayadi, 2008), yet the debt stock and its services increased tremendously to the
68 extent that Nigeria was grouped among heavily indebted poor countries (HIPC). The debt stock
69 rose to US \$716,815.6 billion in 1995 but came down to US\$489269.6 billion in 2004. In 2005, it
70 stands at about US\$26,950,072 billion. This increase was due to interest, surcharges and penalties
71 rather than increase in borrowing of new loan (CBN,2006). Currently, the debt statistics from DMO
72 showed that the current debt stock rose from \$10.32bn in June 30th 2015 to June 30th 2018
73 to\$22.08bn with growth rate of 114.15%.

74 External debt and FI are macroeconomic variables which tend to boost an economy. This is because
75 both of them represent capital inflows which may likely increase the rate of capital formation that is
76 necessary to propel economic growth. These variables may have shown some degree of positive or
77 negative effect in economic growth. FI is one of the most important determinants of the rate of
78 growth in an economy. Arguably, countries with high rate of investments experience high rate of
79 growth, while countries with low investment rate are slow in their growth process(Tawiri, 2010).

80 A combination of private investmentand well-directed external borrowingcan boost a nation's
81 financial needs.Studies carried out by Behname (2012); Sulaiman and Azeez (2012); Yagoob and
82 Zhengming (2013); Melnyk, Kubatko and Pysarenko (2014); and Iqbal, Ahmad, Haider and Anwar
83 (2014) report that external debt and foreign investment have growth-stimulating effect on the
84 economy. In line with this opinion, Osinubi and Amaghionyediwe (2010) asserted that FDI
85 supplements domestic financial resources in order to empower a country to effectually perform her
86 development programs as well as elevate living standards of her populace. External debt and FDI

87 are perceived as panaceas to these constraints, judging from the fact that it provides countries with
88 the opportunity to increase capital formation.

89 Okon, Augustine and Chukwu (2013) opined that while the FDI and external debt growth linkage is
90 still ambiguous, most macroeconomic studies nevertheless support the notion of a positive role of
91 foreign direct investment within particular economic conditions. The emphasis is that there are three
92 main channels through which FDI can bring about economic growth. Firstly, foreign direct
93 investment augments domestic savings in the process of capital accumulation. Secondly, FDI is the
94 main conduit through which technology spill-over leads to an increase in factor productivity
95 and efficiency in the utilization of resources which leads to growth. Thirdly, FDI leads to increase in
96 exports as a result of increased capacity and competitiveness in domestic production (Kudaisi &
97 Idharieh, 2015). This linkage is often said to depend on another factor, called "absorptive capacity",
98 which includes the level of human capital development, type of trade regimes and degree of
99 openness (Ajayi, 2006).

100 External debt and foreign investment are assumed to be beneficial as some researchers like Oke
101 and Sulaiman (2012), Melnyk, Kubatko, and Pysarenko (2014) believed, while some like Clement et
102 al (2003), Cohen (1993) and Warner (1992) were of the opinion that these variables create more
103 harm than good to the economic growth.

104 What applies within the context of the Nigerian economy remains an unresolved issue in research
105 and the need to resolve this conundrum stimulated this study. In specific terms, the uniqueness of
106 this study stems from the fact that it is focused on Nigeria which is the biggest economy in Africa
107 and the fact that there is scarcely any study that has done a measurement of the effect of FI and
108 External Debt on economic growth. Thus, this paper tends to empirically analyze the causal and
109 reverse relationship among external debt, foreign investment and the economic growth of Nigeria
110 from 1980-2017. This study specifically centered on private foreign investment and limits itself
111 only to external debt and the economic growth. FDI and FPI data were combined because before
112 1995 there was no portfolio investment data for Nigeria and thus may prove difficult to work with.

113 This paper is organized in five sections. Next to this section discussed is section two which
114 provides a brief summary of empirical literature, section three provides methodology and

115 modelspecification, while section four shows empirical results and analysis and finally section five
116 provides summary and conclusion of the study.

117 **2. REVIEW OF RELATED LITERATURE**

118 **2.1 Conceptual Review.**

119 Nwachukwu (2017) definedexternal debt as the borrowed fund from the foreign countries with
120 specific percentage of interest rate attached to the money borrowed, whereas, World Bank (2004)
121 defined external debt as debt owed to non-residents repayable in terms of foreign currency, food or
122 service.Also, Were (2001) describseed this economic variable as that part of a country's debt that is
123 borrowed from foreign lendersincluding commercial banks, governments or international financial
124 institutions likeIMF, Asian Development Bank, World Bank or any other private corporation (Paris
125 Club).

126 Foreign investments can be classified in one of two ways: direct and indirect foreign investment.
127 Foreign direct investment inflows refer to capital that originate from the investor country to a host
128 country. The foreign investor invests in assets of the host country. The foreign investor in such
129 arrangement takes financial responsibility of the investment and also manages the assets in the host
130 country (Ostadi & Ashjaa, 2014). Mugambi (2016) defined foreign direct investment as acquisition
131 of foreign assets including foreign currency, rights, credits, property or benefits by foreigners.

132 Foreign portfolio investment (FPI), have been defined as a category of investment instruments
133 that is more easily traded, may be less permanent, and do not represent a controlling stake in an
134 enterprise. These include investments in equity instruments (stocks) or debt (bonds) of a foreign
135 enterprise which does not necessarily represent a long-term interest.

136 **2.2. Theoretical Review**

137 The Dual – Gap Theory was propounded by Harrod and Domar in 1946 provides the motive
138 behindexternal debt as pointed out by Jhingan (2004) which is to fill the lack of savings and
139 investment in a nationas increase in savings and investment would lead to a rise in economic
140 growth. However, Iya, Gabdo & Aminu (2013) stated thatmost economies have experienced a

141 shortfall in trying to bridge the gap between the level of savings and investment and have resorted to
142 external borrowing in order to fill this gap.

143 Eclectic theory of foreign investment developed by Professor Dunning is a mix of three different
144 theories of direct foreign investments consisting of ownership advantages; location
145 and internalization. (Dunning, 1973, 1980, 1988).

146 In his own view, Lerner argues that if borrowed fund from abroad is used in financing current
147 consumption, it is possible that intergenerational effect is likely to take place.

148 This study is anchored on the theory of dual-gap and Lerner's theory of investment based on the
149 premise that the theories go to a great extent to explain the importance of external debt on a nation's
150 savings to enhance domestic investment.

151 **2.3. Empirical Review**

152 Essentially, several empirical literatures abound on the study of relationship between external debt,
153 foreign investment and economic growth, particularly, in both developing and developed all over
154 the world. These literatures differ in terms of time, space, setting and methodology.

155 Asogwa, Okechukwu and Onyekwelu (2018) evaluated the effect of federal government external
156 debts and external reserve on economic growth in Nigeria. The study spanned 2007– 2016. The
157 analytical tools used were unit root test and ordinary least square. The study found out that external
158 debt stock had a negative and significant effect on real gross domestic product.

159 Accordingly, Ajayi and Oke (2012) took an empirical look on the trend of foreign borrowed fund on
160 the development and growth of the Nigeria economy using least square regression analysis with
161 data source from CBN statistical bulletin, the research work reported that a high quantum of foreign
162 borrowed fund bring about reduction in the value of a country currency, reduction in the economical
163 work force, increase level of poverty and generally economic imbalances.

164 Furthermore, Ezikwe and Mojekwu (2011) and Ezeabasili, Isu and Mojekwu (2011) were two
165 studies in Nigeria in support of an adverse effect of debt on economic growth. They studied the
166 relationship between Nigeria's external debt and economic growth between 1975-2006, with an

167 error correction approach. Error correction estimate revealed that external debt has negative
168 relationship with economic growth in Nigeria.

169 In contrast, Oke and Suleiman (2012) examined the level of external debt, investment, and
170 economic growth in Nigeria during 1980-2008 by adopting a debt-cum-growth model along with
171 the investment model. The result of their analysis indicates that, there exists a positive relationship
172 between external debt, investment, and economic growth. Also, Monogbe (2016) empirically
173 investigated the intergenerational effect of borrowed fund on the performance of Nigeria economy
174 from 1981 to 2014. He used OLS, Philip Perron test, co-integration test and Granger causality test
175 to investigate the direction of causality between the variables used. He found out that external debt
176 has positive and significant relationship with economic growth.

177 Nwannebu Ike and Onukaet (2016) examined the impact of external debt on economic growth in
178 Nigeria. The period of study was 1980-2013. Ordinary Least Square was used to analyze the data.
179 Diagnostic tests were conducted using Augmented Dick Fuller Unit Root Test, Co-integration and
180 Error Correction Model. They discovered that External Debt had a positive relationship with Gross
181 Domestic Product at short run, but a negative relationship at long run.

182 Yet, Ogunmuyiwa (2011) in his study “Does external debt promote economic growth in Nigeria”,
183 revealed that causality does not exist between external debt and economic growth as causation
184 between debt and growth was found to be weak and insignificant in Nigeria. In other words,
185 economic growth and external debt does not have any causal relationship.

186 Considering the relationship that exist between foreign debt, investment and the economic growth of
187 developing countries, Wasiu and Mubaraq (2018) explored the relationship between foreign capital
188 flows and economic growth in Nigeria by collecting annual data over the period of 1986 to 2015
189 from various sources. The study employed a combination of stationary and non-stationary series,
190 and reported the absence of a long-run relationship between economic growth and its determinants
191 in Nigeria; net FDI inflows exerted positive short-run influence on growth, while net portfolio
192 flows and net foreign remittance had significant negative short-run effects on growth.

193 Moga and Igor-Mathieu (2016) empirically explored the impact of external debt and Foreign direct
194 investment (FDI) on economic growth in Tanzania using time series data from 1971-2011. The

195 empirical analysis was based on ARDL model and the Boundstest approach of co-integration as
196 advocated by Pesaran et al (2001) to test for long-run equilibrium relationship. Therresults show
197 that, in the long-run debt promote economic growth in Tanzania while foreign direct
198 investmentexhibits a negative impact on economic growth.

199 Azeez, Oladapo and Aluko (2015)studied the impact of external debtand foreign direct investment
200 on the growth of Nigeriafrom 1990 - 2013. With gross domestic product (economicgrowth) as
201 dependent variable on external debt and foreigndirect investment inflows. The model used error
202 correctionmodeling approach. The findings showed that external debt is negatively and
203 insignificantly related to economic growth while foreign direct investment isalso negatively but
204 significantly related.

205 Also, Kudaisi, and Idharhi, (2015) examined the impact of foreigndirect investment and external
206 debt on the economic growth of Nigeria. It adopts the debt-cum-growth model ofOke and Sulaiman
207 (2012) with a little modification of the model so as to accommodate the FDI data within theperiod
208 covered by the study. Augmented-Dickey Fuller unit root test, Johansenco-integration test and
209 ECM were used to empirically analyze the model. The result of the study showedthat FDI and
210 external debt have a statistically significant effect on the economic growth of Nigeria.

211 In another dimension, Olusanya (2013) studied the impact of Foreign Direct Investment (FDI)
212 inflow and economic growth in Nigeria from 1970-2010, using a granger causality test and found
213 that there is a causality relationship between economic growth (GDP) and FDI inflows, which
214 implies that economic growth drives foreign direct investment inflows into the country and vice
215 versa.

216 Kehinde, Olanike, Oni and Achukwu (2015) are of the opinion that it is domestic debt that stifles
217 investment rather than external debt. They investigated the effect of public borrowing on private
218 investment in Nigeria. The study divides public debt into external debt and domestic debt. Johnasen
219 Co-integration test and Vector Error Correction Model (VECM) were used in the analysis. The
220 results showed that domestic debt crowds out domestic investment in both short run and long run,
221 while external debt crowds in domestic investment in the long run.

222 Accordingly, Bamidele and Joseph(2013) examined the effect of financial crisis, external debt
223 management on the economic growth of Nigeria using GDP as endogenous variable while
224 exogenous variables measuring economic growth were Foreign Direct Investment, external debt,
225 external reserve, inflation, and exchange rate proxies. Annual time series of 1980-2010 were used.
226 OLS, Augmented Dickey Fuller (ADF) unit root tests and the Granger causality test were employed
227 in analysis. The result showed a positive relationship between FDI and economic growth while
228 inverse relationship existed between external debt and economic growth.

229 Ezirim, Ofurum and Muogharu(2003) examined the impacts of external debt burden and FDI
230 remittances on economic growth of Nigeriaduring 1970-2001. The authors used granger causality
231 procedure to test the causal relationship between externaldebt crisis and foreign investment crisis
232 plaguing the country, and also x-rayed the relationship between these two variables and the GDP of
233 the country. The results indicate the existence of dual causality between external debt and foreign
234 investment burdens in the country.

235 **3. METHODOLOGY**

236 **3.1 Data and Design**

237 The study made use of the *ex post facto* research design that utilizes existing data on past
238 events. The data for the analyses is annualized time series and is secondary in nature drawn from the
239 Central Bank of Nigeria 2017 Statistical Bulletin from 1980-2017. The study used Autoregressive
240 Distributive Lag model (ARDL) to estimate the variables. The dependent variable for this work is
241 economic growth proxy by real gross domestic product (RGDP) while the independent variables
242 include external debt, (EXD), foreign investment (FDI) and exchange rate (EXCHR). Other
243 preliminary tests like basic descriptive statistics test, unit root test and structural break test were
244 applied in the estimation.

245 **3.2 Model and Estimation Technique**

246 This study followed Learner's theory of growth which sees $GDP=f(Inv)$; while $Inv=f(EXD)$. The
247 general model for this work is thus stated as follows:

248 $RGDP = \beta_0 + \beta_1 EXD + \beta_2 FDI + \beta_3 ECHR + u_t \dots \dots \dots \text{equation 3.1}$

249 For the purpose of the estimation, ARDL model and Bound test were adopted following the form
250 specified and advocated by Pesaran (2001) which appears thus:

251 $RGDP = \beta_0 + \beta_1 EXD_{t-1} + \beta_2 FDI_{t-1} + \beta_3 ECHR_{t-1} + \sum ai \Delta GDP_{t-1} + \sum bi FDI_{t-1} + \sum ci ECHR_{t-1} + u_t \text{ eq.3.2}$

252 RGDP: Real gross domestic product used as proxy for economic growth.

253 EXD: External debt stock

254 FDI: Foreign direct investment representing capital inflows both direct and portfolio

255 ECHR: Exchange rate.

256 $\beta_1 - \beta_3$: Coefficients of the Parameters of the variables;

257 μ : error term

258 ARDL technique is used for the estimation. It has several advantages over other co-integration
259 methods for which cause it is chosen for this work. Firstly, it is efficient in small samples and can
260 allow a combination of I(0) and I(1) variables as per the stationarity of the variables. Other tools
261 used include Bound test, consistent Breakpoint unit root test etc.

262 Following the Bound test approach, co-integration relationship among the variables is either
263 established or not. Two critical values are to be used for the test for co-integration. They are the
264 lower and the upper band. The decisions are to be made as follows:

265 Test statistics > upper band = co-integration

266 Test statistics < lower band = no co-integration

267 Test statistics within upper and lower band = inconclusive.

268 If co-integration is established, short-run dynamic parameters is obtained by estimating an error
269 correction model associated with the long run estimates:

270 $RGDP = \beta_0 + \beta_1 EXD_{t-1} + \beta_2 FDI_{t-1} + \beta_3 ECHR_{t-1} + ECM_{t-1} \dots \dots \dots \text{equation 3.3}$

271 The estimates are subjected to diagnostic tests to confirm validity and reliability of the estimates.

272 In the second stage, causality test will be done using C.W.J Granger causality test method to
273 determine the form of cause and effect relationship between economic growth, external debt and
274 foreign investment represented by FDI.

275 **4. Empirical Results**

276 **4.1 Basic Descriptive Statistics.**

277 To show the statistical properties of the data under study, the basic descriptive statistics is shown in
278 Tale 1 below:

279 **Table 1 The Basic descriptive statistics of GDP and economic growth indicators:**

Variables	Mean	Median	Maxi	Mini	Std	Skewness	Kurtosis	Jarque Bera	Pro
RGDP	414395	297884	1037361	31546.76	272741.8	0.92	2.68	5.49	0.06
EXD	1062990	593185	4890270	1866.800	1333848	1.52	4.24	17.07	0.002
EXCHR	80.97	57.203	305.2899	0.56000	80.43290	0.75	2.89	3.56	0.17
FDI	2.72E+09	1.5E+09	8.84E+09	1.09E+08	2.60E+09	1.03	2.82	6.64	0.04

280 *Source: E-view 10. Computation by the Author.*

281

282 Table 1 contains the basic measures of central tendency, spread and variations calculated on the
283 levelseries of the dataset. The researcher's interest is the Jacque-Bera (JB) statistics which is a test
284 for normality. JB is acombined test of a skewness(S) of zero (0) and a kurtosis (K) of three (3),
285 which are signs of a mesokurtic distribution. Considering the P-value, only RGDP and EXCHR
286 passed the normality test while EXD and FDI were not normally distributed. In this case, the JB
287 statistics shows that the variables are positively skewed andmesokurtic with the exception of EXD
288 (4.24). The assumption of normality is rejected by the JB statistics, as well as the K and S figures.
289 This,however, does not affect the goodness of the data for the estimation in this study as the
290 kurtosis of all the variables are below 3 except EXD (4.24) and the skewness above zero. (Brooks,
291 2008).

292 **4.2Stationarity Properties of the Series.**

293 The first step involves determining whether the datasets contain unit roots in the individual level
 294 series and that they are integrated of the same order; that is, they require the same number of
 295 differencing to attain stationarity. The variables under study were tested for structural breaks
 296 because the traditional unit root test using Augmented Dickey Fuller Test did not account for
 297 structural breaks. This was done by running each variable as an endogenous factor of its constant
 298 subjecting the regression result to multiple breakpoint tests.

299 **Table 2 Unit root Test for all the variables using ADF**

Variables	Critical Values			ADF	Probability	Order of Intg
	<i>1%</i>	<i>5%</i>	<i>10%</i>			
RGDP	-4.23	-3.54	-3.20	-6.02	0.0001	I(1)
EXD	-4.23	-3.54	-3.20	-4.48	0.0050	I(1)
EXCHR	-2.63	-1.95	-1.61	-2.78	0.0071	I(1)
FDI	-4.23	-3.54	-3.20	-7.31	0.0000	I(1)

300
 301 Table 2 shows the results of the Augmented-Dickey Fuller Unit Root Tests of all the variables. The
 302 results are found to be integrated of the same order. At first difference, the p-values are found to be
 303 less than 5% level of significance, and the ADF statistics are found to be more negative than the
 304 critical values. The different order of integration is a precondition for the use of ARDL because it
 305 accommodates integration of variables at different orders.

306 Having confirmed the stationarity of the variables, breakpoint test is presented in table 3 to show
 307 the structural breaks.

308

Log RGDP	-8.59	-5.18	I(0)	2012	-16.66	-5.18	I(1)	2016
Log EXD	-9.07	-5.18	I(1)	2012	-8.30	-5.18	I(1)	2002
EXCHR	-5.69	-5.18	I(1)	2012	-5.98	-5.18	I(1)	2012
Log FDI	-5.81	-5.18	I(0)	2010	-6.08	-5.18	I(0)	2001

325 *Source: Author's computation*

326 This shows that the variables being studied have different and consistent breakpoints at different
327 dates and intervals validating the choice of ARDL test in this study.

328 **4.3. Regression Analysis and Interpretation.**

329 As previously discussed, ARDL test is was used for the regression analysis as the consistent
330 breakpoint unit root test showed that the stationarity properties of the variables were at I(0) and
331 I(1).

332 **Table 5 ARDL Short Run Estimates**

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGRGDP(-1)	0.695929	0.071184	9.776480	0.0000
LOGFDI	0.004439	0.041917	0.105891	0.9165
LOGFDI(-1)	0.060616	0.040898	1.482124	0.1499
LOGEXTDEBT	0.277436	0.019058	14.55730	0.0000
LOGEXTDEBT(-1)	-0.217894	0.022637	-9.625600	0.0000
EXCHR	-0.005922	0.001206	-4.910278	0.0000
EXCHR(-1)	0.003747	0.002070	1.809974	0.0814
EXCHR(-2)	0.003760	0.001698	2.214507	0.0354
C	1.684488	0.929158	1.812920	0.0810

333 *Source: Author's computation from E-views*

334 Focusing on the above regression result, the coefficient of external debt of 0.28 at p-value of 0.000
335 less than the 0.05 level of significant indicates that a unit increase in external borrowing will lead to
336 28% increase in the gross domestic product of Nigeria. The coefficient of foreign investment of
337 0.004 at p-value of 0.91 greater than 0.05 level shows that a unit increase in foreign investment
338 inflows have a 92% insignificant effect on the gross domestic product of the nation, thus, does not
339 impact the economic growth of Nigeria. Also, the coefficient value of exchange rate is -0.005 at p-
340 value of 0.000 indicating that any little increase in exchange rate will result in 0.5% decrease in the

341 gross domestic product of Nigeria indicating that, as an importing economy, any slight change
342 ,negative or positive will automatically affect the real gross domestic product of Nigeria.

343

344

345 **4.4. Diagnostic Test Result**

346 To ensure the results are not biased, the R^2 (goodness of fit) =98%; DW (Durbin Watson) = 2.04;
347 F-statistics= 0.000. To show the robustness of results a test for a high order autocorrelation is done
348 using BGLM test. This is necessary because the DW has apparent time limitation. It has only the
349 1st lag. BGLM Test F-Stat= 2.65; P-v F-Stat 0.04. With the P-value less than 0.05 level of
350 significance, there is a serial correlation, hence the need for the test of heteroskedasticity.Het
351 (Breusch-Pagan-Godfrey) F-Stat 0.25756 (0.8554), Ramsey (RESET) F-stat= 0.00036 (0.98415).

352 All the independent variables and their lags are significant function of the dependent variable
353 (RGDP) except FDI in its 1st lag within the short run relationship.

354 Following table 5.1above, Log linear and non-log linear variables were used in running the
355 regression. Log EXD, Log FDI, and EXCHR were used as independent variables.The coefficient of
356 external debt of 0.28, at p-value of 0.000 less than the 0.05 level of significant shows a positive and
357 significant response to gross domestic product. It also indicates that a unit increase in external
358 borrowing will lead to 28% increase in the gross domestic product of Nigeria. The R^2 which is a
359 show of the goodness of fit of the model is 93% which means that 93% of variation in RGDP was
360 explained by the explanatory variables and about 7% of the relationship is explained by factors not
361 captured by the model.The F-statistics of 92.70, P-value = 0.000 at a critical value of 0.05 shows
362 that the overall regression is significant and can be used for meaningful analyses. The Durbin
363 Watson statistics (DW) value of 2.04 indicates that evidence of a first order serial autocorrelation
364 AR(1) is not suspected.

365 Given that External debt has a positive coefficient and a significant t-statistics probability value of
366 $0.000 < 0.05$, the null hypothesis is rejected and conclusion is that external debt has positive and
367 significant relationship with the economic growth in Nigeria.

368 In relation to the cause and effect relationship of the variables, a causality test is done to determine
369 the direction of the relationship. Causality occurs when lag values of a variable can be used to
370 predict the current values of another variable. Cause and Effect relationship can be in three forms:
371 Bi-direction, Unidirectional, and no causation. Causality test is attached as appendix. From the

372 result of the Granger causality test, FDI and RGDP have a unidirectional relationship at p-value of
 373 0.001 <0.005 showing a significant relationship between economic growth and foreign investment,
 374 While others have insignificant relationship with each other.

375
 376

377 **Table 6**

Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LOGFDI does not Granger Cause LOGRGDP	35	4.92152	0.0142
LOGRGDP does not Granger Cause LOGFDI		0.36126	0.6998

378 Following table 6 above, Log linear and non-log linear variables were used in running the
 379 regression. Log EXD, Log FDI, and EXCHR were used as independent variables. The F-statistics
 380 of log FDI and its p-value of 0.014 indicate a unidirectional relationship running from FDI to
 381 RGDP without a feedback from RGDP. The RGDP p-value is insignificant showing that there is no
 382 feedback to FDI. It is concluded that foreign investment has a causal relationship with gross domestic
 383 product of Nigeria. The more there is foreign investment inflow the more the economic growth is
 384 impacted.

385 **4.6. Bound Test and Error correction Test.**

386 A test for long run relationship between the variables was done using Bound test. It is a co-
 387 integration test in ARDL. It uses a combination of I(0) and I(1) variables; most suitable for data
 388 samples and not restricted in terms of stationarity of the variables.

389 **4.6.1 Bound Test of Co-integration**

390 **Table7 ARDL Bound Test**

391 **Null hypothesis: No level relationship.**

	Test stat	Value	K
F-stat	11.1810	3	

394

Significance	Critical values	
	I(0) bound	I(1) bound

10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

395
396 Focusing on the co-integration test for long run relationship in table 7 above, the null hypothesis is
397 rejected because the F- statistics is greater than the lower and upper critical bands at 0.05 significant
398 levels. This implies that long run equilibrium relationship exists between the variables. Therefore,
399 error correction test is presented in table 8 below to determine how the deviation from short run
400 equilibrium is restored in the long run.

401 **Table 8 Error Correction Model of Long Run Relationship.**

Indices	ECM(-1)	D(log EXD)	D(log FDI)	D(EXCHR)
Coefficient	-0.304	0.28	0.004	-0.06
Std. Error	0.004	0.02	0.03	0.24
T-Statistics	-7.03	17.55	0.14	7.07
P-value of t-stat	0.0000 < 0.05	0.0000 < 0.05	0.89 > 0.05	0.000 < 0.05

402 *Source: Author's computation External Debt, FDI, ECM*

403 Considering the result from the ECM model, the error correction term of -30.40% is negatively
404 signed and with p-value of 0.000 less than 0.05 critical value. Hence, any departure from the short
405 run equilibrium is corrected by 60.60% speed of adjustment in the long run. This is a convergence
406 from the short run equilibrium to long run equilibrium showing how the RGDP adjust speedily to
407 the shocks from the independent variables.

408 5. SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMENDATIONS

409 This study examined the direct and reverse causality between external debt, foreign investment and
410 economic growth in Nigeria, using the ARDL econometric analysis technique. The main objective
411 of the study is to examine if a causal relationship exist between the economic growth, external debt
412 and foreign investment in Nigeria. The specific objectives are: to examine the extent to which
413 external debt affects gross domestic product of Nigeria; and to examine the causality between
414 foreign investment and economic growth in Nigeria. This was done by modeling foreign domestic
415 investment, external debt, exchange rate and economic growth (represented by gross domestic
416 product as proxy) in Nigeria. The study used annual time series data from 1981 to 2017. In the

417 regression analysis, descriptive statistics, the Augmented Dickey Fuller (ADF) unit root test,
418 consistent Breakpoint unit root test, the Granger causality test, Bound test of cointegration and
419 Error correction model were employed, to examine the degree of integration among the variables.
420 Empirical findings from the study showed that:

- 421 (i) External debt has significant and positive effect on economic growth;
- 422 (ii) Foreign direct investment has a unidirectional causality with real gross domestic
423 product of Nigeria, without a feedback from gross domestic product. This implies that
424 FDI is an important factor to the economic growth of an importing economy like
425 Nigeria. The reason for the non-feedback from RGDP could be attributed to insurgency
426 and insecurity inhibiting foreign investors from Nigeria;
- 427 (iii) Exchange rate has a negative but significant effect on the real gross domestic product of
428 Nigeria.
- 429 (iv) The ECM result shows that about 30.40% of any disequilibrium between the short-run
430 and long-run of external debt, foreign investment, economic growth relationship is
431 covered within a year by a speed of adjustment of 60.60%.

432 It has been discovered from various research reports that external debt, foreign investment inflow
433 have one form of relationship with economic growth especially in the developing countries like
434 Nigeria. But the kind of impact, whether positive or negative is what has been discovered to be the
435 issue of debate. Some researchers agree with positive significant impacts while others agree with
436 negative impacts and to others no impact at all. In Nigeria various research reports have been
437 carried out on external debt, foreign investment and economic growth. Nevertheless, it has also
438 been discovered that no matter how good external debt and foreign investment have been in
439 economic development, Nigeria have so far attracted little of foreign inflows due to insecurity,
440 exchange rate instability, political crises and more so, and the much that has been attracted have not
441 so far been retained. Secondly, external borrowing has been on the increase without being
442 channeled to productive sector that guarantee positive return on investment. Mismanagement of
443 borrowed fund has been ugly phenomena among the political class in Nigeria. This as a course for
444 concern has led many research work into examining the direct and reverse cause and effect
445 relationship between external debt, foreign private investment, and economic growth. This
446 discourse being one of them, have looked at External debt, foreign direct investment and economic
447 growth in Nigeria: direct and reverse analysis, using ARDL method, Bound test of co-integration

448 and consistent breakpoint unit root test and Granger causality. Causal relationship exist between
449 FDI and RGDP without a reverse cause, whereas, external debt relationship with real gross
450 domestic product is insignificant. Since external debt is significant and positive in this study, it
451 implies that borrowed fund should be channeled properly to projects that will generate positive
452 return on investment and should not be used to finance current consumption expenditures and the
453 rate of borrowing should be reduced. The study found out that a causal relationship exists between
454 foreign investment and real gross domestic product though without a response from RGDP. This
455 implies that FDI can bring about economic growth if investment environment is provided for
456 foreign investors. Here, the investors are moving out of Nigeria due to insurgency and political
457 unrest in the nation as well as instability of exchange rate. The study recommends that insurgency
458 and insecurity be reduced to a barest minimum, maintain a stable exchange rate so as to attract
459 foreign investment into Nigeria and look inward for other factors that will also be a determining
460 factor in boosting foreign investment in Nigeria. The study also recommends that the economy be
461 diversified to agriculture, manufacturing etc.

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465 REFERENCES

466 Adegbemi, B.O (2012). *Foreign Direct Investments and Economic Growth in Nigeria: A Disaggregated Sector*
467 *Analysis. Journal of Economics and Sustainable Development*, 3(10), 2012

468 Abala, D. (2014). *Foreign Direct Investment and Economic Growth. An*

469 Adesola, W.A, (2009). *Debt Servicing and Economic Growth in Nigeria: An Empirical*
470 *Investigation, Global Journal of Social Sciences*, vol. 8, (2), 1-11.

471 Ajayi, L.B. and Oke, M.O. (2012). *Effect of external debt on economic growth and development of*
472 *Nigeria. International Journal of Business and Social Science*, 3(2), 297-304.

473 Aluko F. and Arowolo D. (2010). *Foreign aid, the Third World's debt crisis and the implication for*
474 *economic development: The Nigerian experience. African Journal of Political Science and*
475 *International Relations*. 4(4): 120-127.

476 Asogwa, J. O. Okechukwu, E. U, Onyekwelu, U. L, (2018). *Evaluation of the Effect of Federal*
477 *Government External Debts and Reserves on Economic Growth in Nigeria* *Journal of Economics*
478 *and Sustainable Development* 9(6), 2018.

479
480 Atique, R. and Malik, K. (2012). *Impact of domestic and external debt on the economic growth of*
481 *Pakistan. World Applied Sciences Journal*, 20(1), 120-129.

482
483 Ayadi, F.S and Ayadi, F.O (2008). "The Impact of External Debt on Economic Growth: A
484 *Comparative Study of Nigeria and South Africa". Journal of Sustainable Development in Africa*. 10
485 (3).

486 Azeez, Oladapo, Olufemi and Aluko, (2015) *External Debt or Foreign Direct Investment: Which*
487 *has greater significance Economic Impact on Nigeria. European Scientific Journal* July .11(19).

488 Bamidele, T. B. & Joseph, A. I (2013). *Financial crisis and external debt management in Nigeria,*
489 *International Journal of Business and Behavioural Sciences*, 3(4): 16-24.

490

491 Behname, M. (2012). *Foreign direct investment and economic growth: evidence from Southern*
492 *Asia. Atlantic Review of Economics, 2.*
493

494 Bolanle Azeez, Fapetu Oladapo, and Olufemi A. Aluko. *External Debt Or Foreign Direct*
495 *Investment: Which Has Greater Significant Economic Impact On Nigeria? European Scientific*
496 *Journal July 2015, 11(19)*
497

498 Borensztein, E. (1990). *Debt overhang, credit rationing and investment. Journal of Development*
499 *Economics, 32,315-335.*
500

501 Chowdhury, A.R. (2004). *External debt, growth and the HIPC initiative: Is the country choice too*
502 *narrow? In: Addison, T. Hansen, H and Tarp, F editors. Debt Relief for Poor Countries. 8. New*
503 *York 2004, 158-180.*
504

505 Clements, B, Bhattacharya, R and Nguyen, T.Q. (2004). *External debt, public investment, and*
506 *growth in low-income countries. IMF Working Paper WP/03/249, International Monetary Fund.*
507

508 Clements, B., Bhattacharya, R., and Nguyen, T.Q. (2003). *External Debt, Public Investment, and*
509

510 Cohen, D. (1993). "Low Investment and Large LDC Debt in the 1980s." *American Economic*
511 *Review, 83(3): 437-449.*
512

513 Corden, W. M. (1989). "Debt Relief and Adjustment Incentives." in Jacob, F., Dunning, J. H.
514 (1988). *The Eclectic Paradigm of International Production: A Restatement and Some Possible*
515 *Extensions. Journal of International Business Studies, 19(1), 1-31.*
516

517 Eduardo, B. (2009). The effect of external debt on Investment. *European Journal of Accounting*
518 *Auditing and Finance 4(2), 33-48.*
519

520 Elbadawi, I.A., Ndulu, B.J., Ndung'u, N. (1997). *Debt overhang and economic growth in Sub-*
521 *Saharan Africa. In Iqbal, Z., Kanbur, R., editors. External Finance for Low-income Countries.*

522 *Washington, DC: International Monetary Fund. Empirical Analysis of Kenyan Data. DBA African*
523 *Management Review. 4(1), 62-83.*
524

525 Ezeabasili, V. N, Isu, H.O and Mojekwu, J.N (2011). *Nigeria's External Debt and Economic*
526 *Growth: An Error Correction Approach. International Journal of Business and Management, 6, (5)*
527 *May.*

528 Ezikwe, J.E., Mojekwu, J.N. (2011). *The impact of external debt on macro-economic performance.*
529 *International Journal of Business and Management Tomorrow, 1(2), 1-12.*
530

531 *Foreign Direct Investment for D8 Member Countries. Walia Journal, 30(3), 18-22.*

532 Gana, J.M. (2002). *Nigeria's external debt: causes and implications. Ibadan: National Centre for*
533 *Economic Management and Administration.*

534 *Growth in Low-Income Countries, IMF Working Paper WP/03/249, International Monetary Fund,*
535 *Washington D.C.*
536

537 Iqbal, N., Ahmad, N., Haider, Z. & Anwar, S. (2014). *Impact of foreign direct investment (FDI) on*
538 *GDP: a case study from Pakistan. International Letters of Social and Humanistic Sciences, 5, 73-*
539 *80.*

540 Iyoha, M. A. (1996). *External Debt and Economic Growth in Sub Saharan African Countries: An*
541 *Econometric study.* Paper presented at AERC workshop, Nairobi.

542 Kehinde J. A, Olanike .B, Oni E, and Achukwu. *Public Debt and Private Investment in Nigeria.*
543 *American Journal of Economics 2015, 5(5): 501-507.*

544 Krugman, Paul. (1988). *Financing vs Forgiven a Debt Overhang.* National Bureau of Economic
545 Research, Cambridge. MA 02138, USA.

546 Kudaisi, B.V Idharhi, K. *FFDI, Foreign Debts and Growth in Developing Countries: Evidence from*
547 *Nigeria Developing Country Studies 5(17), 2015*

548
549 Li Meng. and M. Sumaria (2013). “Does External Debt Increase Net Private Wealth? The Relative
550 Impact of Domestic versus External Debt on the US Demand for Money” *Journal of Applied*
551 *Finance & Banking*, 3 (5), 2013, 85-91.

552
553 M. P. Dooley and P. Wickham, (eds), *Analytical Issues of Debt*, International Monetary Fund,
554 Washington, D.C.

555
556 Maurren Teresa Odongo, (2014). *The Impact of External Debt on Private Investment in Kenya:*
557 *Empirical Investigation, 1970-2002 University of Nairobi East Africa.*

558
559 Melnyk, L., Kubatko, O. & Pysarenko, S. (2014). *The impact of foreign direct investment on*
560 *economic growth: case of post communism transition economies. Problems and Perspectives in*
561 *Management*, 12(1), 17-24.

562
563 Moga Tano Jilenga, Helian Xu and Igor-Mathieu Gondje-Dacka *The Impact of External Debt and*
564 *Foreign Direct Investment on Economic Growth: Empirical Evidence from Tanzania International*
565 *Journal of Financial Research* 7(2), 2016 Sciedu

566 Monogbe, T. G. (2016). *Intergenerational Effect of External Debt on Performance of the Nigeria*
567 *Economy. NG- Journal of Social Development*, 5 (2) January.

568 Nwachukwu, N.P (2017). *Responsiveness of Economic Growth To External Debt Overhang in*
569 *Nigeria, 1980-2015. Un-published Dissertation work submitted to Department of Banking and*
570 *Finance, Enugu State University of Science and Technology (ESUT), Enugu.*

571 Nwannebuike S.N, Ugwu, J.I and Onwuka .I.O. (2016). External Debt and Economic Growth: The
572 Nigeria Experience. *European Journal of Accounting Auditing and Finance Research*. 4 (2): 33-
573 48, February.

574 Obadan, M.I (2004). “*Foreign Capital Flows and External Debt: Perspectives on Nigeria and the*
575 *LDCs Group*” Ibadan University Press.

576 Ogumuyiwa, M. S. (2011). *Does External Debt Promote Economic Growth? Current Research*
577 *Journal of Economic Theory* 3(1): 29-35.

578 Oke, M. O and Sulaiman, L. (2012). *External Debt, Economic Growth and Investment in Nigeria.*
579 *European Journal of Business and Management.* 4 (11).

580 Okon, J. U. Augustine and Chukwu, A. (2013). “*Foreign Direct Investment and Economic Growth*
581 *in Nigeria: An Analysis of the Endogenous Effects*” *Current Research Journal of Economic Theory,*
582 *4(3), 53-66*

583

584 Osinubi, T.S. and Amaghionyeodiwe, L.A. (2010). *Foreign private investment and economic*
585 *growth in Nigeria. Review of Economics & Business Studies, 3(1), 105-127.*

586

587 Ostadi, H. and Ashja, S. (2014). *The Relationship Between External Debt and*
588

589 Pattillo, C., Poirson, H. & Ricci, L. (2002). *External debt and growth (Working Paper 02/69).*
590 *Washington D.C.: International Monetary Fund.*

591

592 Purity Kagendo Mugambi (2016). *The Impact of External Debt Service on Foreign Direct Investment*
593 *Inflows in Kenya (1980-2014) A research paper submitted to*

594

595 Sachs, J. (1984). “*Theoretical issues in international borrowing*”. *Princeton Studies in*
596 *International Finance, 54. Princeton, N.J.: Princeton Univ. Press.*

597 Soludo, C. C. (2003), *Debt Poverty and Inequality in Okonjo- Iweala, Soludo and Mulitar*
598 *(Eds), The Debt-Trap in Nigeria, African World Press NJ, 23-74.*

599 Sulaiman, L. A. and Azeez, B. A. (2012). *Effect of External Debt on Economic Growth of*
600 *Nigeria. Journal of Economics and Sustainable Development. 3 (8).*

601 Tawiri, N. (2010). *Domestic Investment as a drive of economic growth in Libya. International*
602 *Conference on Applied Economics – ICOAE, 759 – 767.*

603 *University of Nairobi 2016*

604

605 Warner, A.M. (1992). *Did the debt crisis cause the investment crisis? The Quarterly Journal of*
606 *Economic, 107(4), 1161-1186.*

607

608 Wasiu Adekunle and Mubaraq Sulaimon *A Re- examination of the Relationship between Foreign*
609 *Capital Flows and Economic Growth in Nigeria. Munich Personal RePEc Archive. MPRA Paper*
610 *87754, 2018 18(49) UTC*

611 Were, M. (2001). *The Impact of External Debt on Economic Growth in Kenya: An Empirical*
612 *Assessment, UNU-WIDER Research paper, DP 2001/116.*

613

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