

Credit market and economic development in Nigeria

ABSTRACT

A developed and efficient credit market encourages savings, allocative efficiency of investible funds and promotion of capital accumulation. Countries with deeper credit market face less severe business cycle, output contraction and lower chances of an economic downturn. This will directly or indirectly boost private investment behavior in the economy. However, in Nigeria the objective of improving the level of economic development through the credit market is yet to be achieved. This may be attributed to inability of the investors to channel credit market investible fund to projects that are productive. This study therefore, examines the relationship between credit market and economic development in Nigeria using data between 1970 and 2012. A standard econometric method of error correction mechanism was adopted. Though the result shows a direct and positive relationship credit market and economic development in Nigeria, the effect of the return on investment to economic development is adverse against the Keynesian theory of investment. It is therefore, recommended that investible funds from the credit market should be restricted to viable investments.

Keywords: Credit market, economic development, return on investment and foreign direct investment

1. INTRODUCTION

A developed and efficient credit market is a prerequisite for economic development of every economy. As opined by [1], [2], [3], [4], [5], [6], financial development contributes to economic development through increase in savings, allocative efficiency of loanable funds, and promotion of capital accumulation as it increases the multiplier effect of the credit market on economic development. Study by [7] posits that increase in deposit rate encourages savings; promote credit market development which in turn leads to economic development through the multiplier effect. While [8] is of the opinion that the allocation of savings through identification and funding of entrepreneurs are veritable tools for achieving economic growth in an economy. Statistics has shown that development of credit market in Nigeria has not contributed meaningfully to economic development. For instance, between 1976 and 1986, credit market increased from 10.28 percent to 49.9 percent, while the income per capita decreased from ₦62, 468.66 to ₦46, 464.18 respectively. This shows that the increase in income occasioned by the discovery of oil in the economy was not invested in the credit

market which is presupposed to make the market more liquid and funds available for investors which will bring further development in the economy.

However, the introduction of the bank consolidation policy in 2004 by the then CBN Governor (Charles Soludu) revived the hope in the credit market in Nigeria. As at 2001, credit market which was 12.46 percent in 2004 rose to 36.46 percent [9], but this has not contributed significantly to economic development in Nigeria. In order to improve the level of economic development in the country, various policies have been adopted which include among others; the Nigerian Enterprise Promotion decree of 1972, amended in 1977 as Indigenization decree, the Structural Adjustment Programme of 1986, Guided Deregulation of 1994, the National Economic Empowerment Development Strategies of 1999 and the bank Consolidation of 2004. Despite the development in the credit market, development in the economy is yet to be achieved in Nigeria.

This paper is therefore set to explore the relationship between credit market and economic development in Nigeria using the available information. This will enable us figure out the missing link between the two and policies will be recommended which if implemented will improve the impact of credit market on economic development in Nigeria. Credit market is measured as a ratio of banking sector credit to GDP (BSC/GDP), while economic development is measured by GDP per capita (GDPPC). This paper is organized in sections. Section 2 reviews the existing literature on the relationship between credit market and economic development and the methodology adopted in the study. Section 3 reports the estimated results and section 4 concludes the work.

2. LITERATURE SURVEY

According to [10] who studied credit market and economic development in India using Vector Autoregressive Model (VAR) they concluded the existence of a positive relationship between both variables. This implies that enhanced credit market will necessarily generate opportunities for investment in the economy which will attract a new class of entrepreneurs with innovative ideas that will inevitably ensure higher economic development in the long-run. [11] studied the role of financial structure in economic development in Nigeria using aggregate annual data from 1970 to 2005. They developed a macro econometric model to capture the interrelationships among aggregate bank credit activities, investment behavior and economic growth given the financial structure of the economy. Three stage least square estimation technique was adopted while counterfactual policy simulations were conducted. The paper holds that a developed financial system alleviates growth financing constraints by increasing bank credit and investment activities with resultant rise in output. A major outcome of this study is that financial structure has no independent effect on output growth through bank credit and investment activities, but financial sector development merely allows these activities to positively respond to growth in output. The policy implication therefore, is that effort should not be dispensed at promoting a particular type of financial structure but geared towards policies that would reduce transaction cost such as the enforcement of creditors and investors rights in the financial system. This will bring about the development of banks and the capital market which will stimulate growth in the economy. In Italy, [12] investigated the relationship between credit market and economic development between 1995 and 2007 using a vector error correction model (VECM). The empirical results indicated that economic development had positive effect on credit market development, while inflation rate had a negative effect within the period. By employing a panel dataset covering 29 Chinese provinces over the period of 1990-2001, [13] employed the Generalized Method of Moment (GMM) technique to empirically examine the relationship between banking sector development and economic growth in China. Empirical results showed that, without an effective and well-developed legal system, banking sector development only partially contributed to China's economic growth.

On the direction relationship, [14] in their study on ten developing economies observed that bidirectional causality exists between financial development and economic development in all samples. However, study carried out in 2005 by [15] on Ghana Stock Exchange (GSE) shows that stock market performance granger causes economic development in the economy, hence, a unidirectional relationship. This upheld the fact that the economic development does not predict stock market development in Ghana. This was attributed to low level of income as evidenced in most developing countries. Similar result was obtained by [16] who investigated the relationship between the development of the Ivorian stock market and the country's economic performance. His findings suggest that gross domestic product and stock market development were co-integrated when control variables were included in the analysis. In other words, there exists a long-run relationship between these variables taken together. The result also indicates a unidirectional relationship between the capital market and the economic development of the economy. [10] examined the direction of causality that runs between credit market development and the economic growth in India for the period 1980 to 2008. In the VAR framework the application of Granger Causality Test provided the evidence in support of the fact that credit market development spurs economic growth. The empirical investigation indicated a positive effect of economic growth on credit market development of the country. [17] recently examined the causal relationship between financial development and economic growth of seven Asian developing countries (Thailand, Indonesia, Malaysia, the Philippines, China, India and Singapore) during the last 30 years, using multivariate VAR model. The study concluded that no general consensus can be made about the finance-growth relationship in the context of developing countries. Using a Vector Auto-regression (VAR) approach, [18] examined the impact of financial development on economic growth in China. They found that financial development comes as the second force (after the contribution from labor input) in leading economic growth in China. Their study supports the view in the literature that financial development and economic growth exhibit a two-way causality and hence is against the so-called "finance-led growth" hypothesis. [19] observed that countries with deeper capital market face less severe business cycle output contraction and lower chances of an economic downturn compared to those with less developed capital market. On their part, [20] reported that financial system development could have adverse effect on economic growth in a sample of 11 countries they studied, and therefore advocated for a vibrant financial sector. The [21] found that stock market development does not merely follow economic development, but provides the means to predict future rates of growth in capital, productivity and per capital GDP. In conclusion, the Bank holds that increase in banking and stock market development leads to increased real per capital growth. [22] examined the relationship between stock market development and economic growth for 21 emerging markets over 21 years, using a dynamic panel method. Their results indicated a positive relationship between several indicators of stock market performance and economic growth both directly and indirectly by boosting private investment behavior.

A number of empirical studies were also carried out to assess the impact of financial sector development and economic development in Nigeria by a number of authors. [23], for instance, tested the causality between financial variables and economic development. Among other findings, he found a rather weak unidirectional causation from the GDP to the broader money when Sim's procedures were used and contrary estimates for Granger causality. Moreover, [24] applied co-integration and Granger causality to Nigerian quarterly series data for 1962-1992 in order to test if the relationship between financial deepening-growth is either "demand following" or "supply leading". Among other results, his study showed that the Nigerian economy exhibits a mixture of "supply-leading" and demand-following patterns whereby causation runs from the financial sector of the economy to the

real sector and *vice-versa*. His study also supports the case of unidirectional causality from the real sector to the financial sector as in [25]. Part of his conclusions was that money is causally prior to income, in the sense of Granger, for Nigeria, and that the reverse causation holds. [26] studied the impact of the Nigerian capital market on economic growth between 1970 and 2012 using the error correction mechanism; they discovered a positive and unidirectional relationship between capital market and economic growth in Nigeria.

According to [27], who studied banking sector credit and economic growth in Nigeria using two-stage least square method and concluded that positive relationship **exists** between private sector credit and economic growth in Nigeria. However, a study by [7] shows the existence of an inverse relationship between banking sector credit and economic development in Nigeria. This they attributed to inefficient utilization of credit market funds. This is supported by [28] which opined that credit market's contribution to economic development is dependent on the investment efficiency of the market's investible funds.

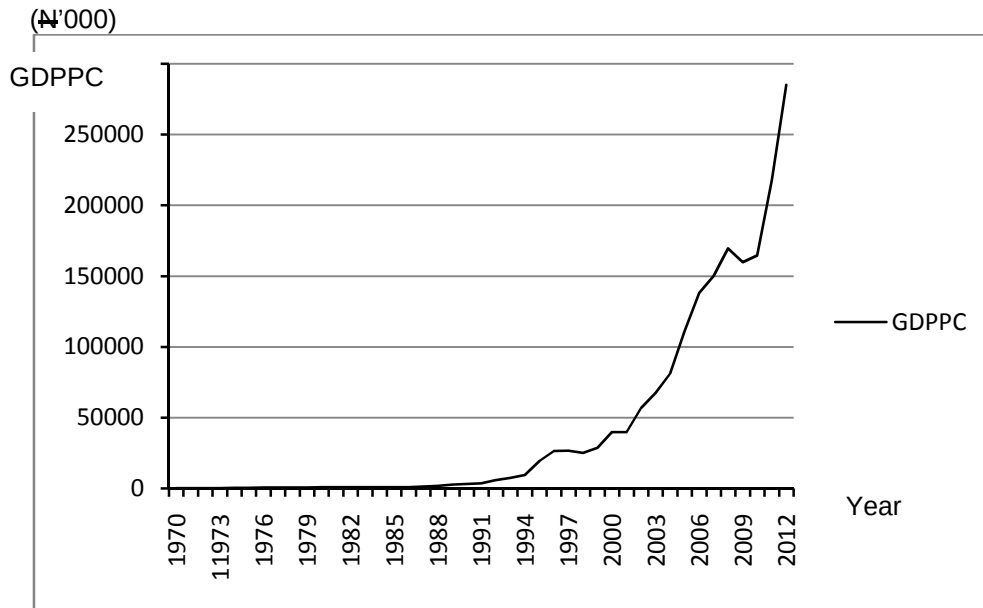
2.1 Data Set and Definition of Variables

This paper employs time series data between 1970 and 2012 from CBN statistical bulletin, World Bank and IMF financial reports. Gross domestic product per capita (GDPPC) in accordance with [29] is used as a measure of economic development in this study. Credit market development is measured by the ratio of banking sector credit to real GDP (BSC/GDP) as used in [30]. Investment productivity is measured by ratio of gross domestic product to gross domestic investment (GDP/GDI). TOP is trade openness and is obtained by adding import and export divided by GDP. The higher the TOP rate, the higher will be the level of development of the credit market and according to the new growth model; the coefficient should be positive. While FDI is foreign direct investment which is expected according to theories reviewed to contribute positively to credit market development and economic development. DR is the deposit rate, is expected to have positive effect on economic development through the credit market according to [7].

2.2 Trends in Credit Market and Economic Development in Nigeria

In 1970 as shown in fig 1 below, income per capita was N51, 093.80, with the discovery of oil in the 70's it increased to N63, 981.88 in 1974. As a result of fiscal indiscipline by the public sector, the improvement in the level of economic development was not sustained; income per capita reduces drastically to N46, 464.18 in 1986. With the introduction of the Structural Adjustment Programme (SAP) in 1986, income per capita improved to N54, 381.02 in 1993. We can say that the policy had a positive impact on economic development in the country though not more than it was in 1974. In 1994 and 1999, the introduction of the Guided Deregulation and the National Economic Empowerment Development Strategies of 1999 policies further raised the level of economic development from N53158.23 in 1994 to N59, 086.04 in 2003. Since the inception of the consolidation era in 2004, income per capita has increased from N63, 752.63 to N83, 802.50 in 2011. Considering the level of economic development in the 70's, a greater volume of improvement would have been expected at present. This shows that Nigeria has not recorded the expected level of development in its economy

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Fig. 1. Economic development in Nigeria

195 In fig 2, the level of credit market development which was 12.74 percent in 1970 instead of
196 improving as a result of the discovery of oil in the 70's was in a deficit in 1974 (-1.6 percent).
197 This may be attributed to lack of confidence in the credit market's investment, low level of
198 investment orientation and reckless spending by the public sector. Thus Nigerians prefer to
199 spend the increased revenue on consumption goods instead of investing to plough it back to
200 the economy. However credit market development reached its climax in 1986 (49.9 percent)
201 which marked the beginning of the SAP period, but this development was not maintained as
202 it falls to 29.02 percent in 1993. Credit market improved again to 35.49 percent in 1994 but
203 this fell to 8.6 percent in 2005. Within the consolidation regime (since 2006), the credit market
204 has followed another dimension as there has been persistent increase in the market though
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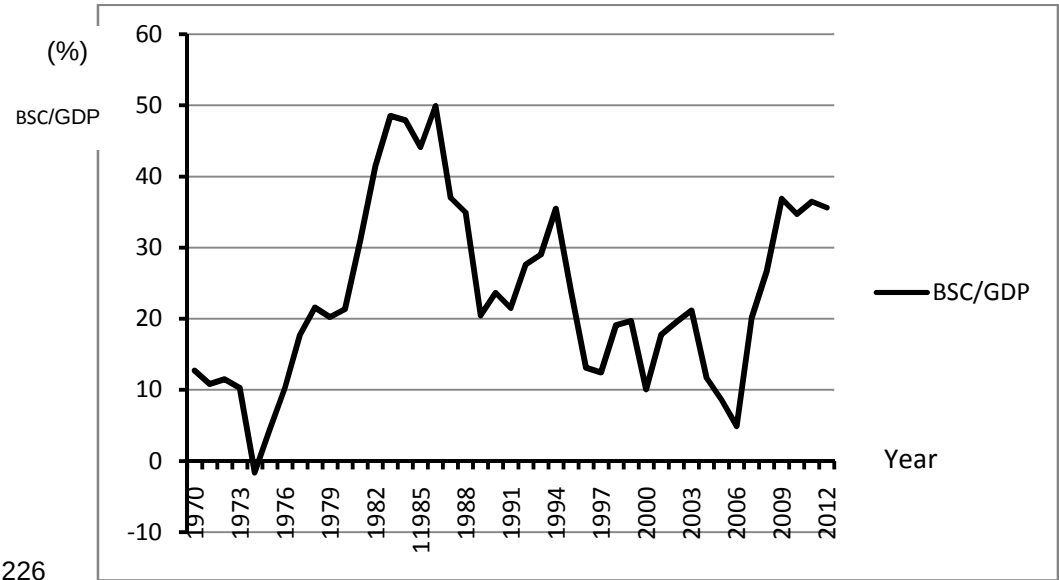


Fig2: Credit market development in Nigeria

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2.3 Theoretical Models

The neoclassical growth theory opined that increase in productivity and capital accumulation stimulate the level of economic development in any economy. Therefore efficient utilization of credit market funds is expected to impact positively on the level of economic development of the country. According to feedback theory, a country with a well developed credit market triggers economic development. This in turn stimulates demand for financial services and further increases the level of economic development. In the theory of flow of capital movement, there exist a positive relationship between credit market development and foreign direct investment. In which foreign direct investment improves the level of development in the credit market. Supply-leading hypothesis of [31], posit that new assess to supply-leading funds open new horizons as to possible alternatives, enabling the entrepreneur to “think big”. By implication, credit market development contributes in the establishment of new firms in new industries or in the merger of firms, by assuming entrepreneurial initiatives. According to [32], the main implication of the new growth theory is that a policy which embraces openness promotes growth in the economy. In other words, trade openness is a determinant of economic development and the higher the degree of openness, the higher will be the level of economic development. In the theory of flow of capital movement, there exist a positive relationship between credit market development and foreign direct investment. In which foreign direct investment improves the level of development in the credit market. The two-gap theory also posits a positive relationship between foreign direct investment and economic development. [7] posit that increase in deposit rate promotes credit market which translates to economic development if efficiently invested. Based on the above theories, we model economic development as:

$$GDPPC = f(GDP / GDI , BSC / GDP , TOP , FDI , DR , V)..... (i)$$

255 This, in the linear form can be rewritten as:

256 $GDPPC = a_0 + a_1GDP / GDI + a_2BSC / GDP + a_3TOP + a_4FDI + a_5DR + \varepsilon_t \dots\dots\dots (ii)$

257 Where, a_1, a_2, a_3 , and a_4 are the coefficients of the model estimate while ε_t is the white noise
258 error term, and $a_1>0, a_2>0, a_3>0, a_4>0$ and $a_5>0$.

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261 **2.4 Estimation Method**

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263 The study adopted Augmented Dickey Fuller unit root test to test for the stationarity of the
264 variables. Co-integration test is used to test for the existence of long-run relationship
265 between the variable and error correction mechanism which is used to estimate the
266 coefficients of the model.

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268 **2.4.1 Unit root test**

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270 Augmented Dickey Fuller (ADF) test which considers lagged values of the dependent
271 variables in order to obtain an unbiased estimate of δ , the coefficients of the lagged variable
272 Y_{t-1} is used. The ADF unit root test requires the estimation of the regression

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$$\Delta Y_t = a_0 + \beta Y_{t-i} + \sum_{i=1}^p \delta_i \Delta Y_{t-i} + \varepsilon_t \dots\dots\dots iii$$

274 where, ΔY_t = first difference of Y_t

275 a_0 = the intercept

276 δ_i = the trend coefficient

277 β = the coefficient of the lagged term

278 t = the time or trend variable

279 p = the number of lagged terms

280 ε_t = the white noise.

281 The hypotheses to be tested are:

282 $H_0: \beta=0$, i.e., Y_t has unit root (the time series is non stationary)

283 $H_1: \beta<0$, i.e., Y_t has no unit root (the time series is stationary).

284 If the calculated ADF test statistic is higher than MacKinnon's critical values, then the null
285 hypothesis (H_0) is accepted and the time series is considered non stationary or not
286 integrated of order zero, i.e., $I(0)$. Alternatively, the rejection of the null hypothesis implies
287 stationarity of the underlying time series. Failure to reject the H_0 leads to the test on the
288 difference of the time series. In other words, differencing is conducted until stationarity is
289 achieved and the null hypothesis is rejected [33]. The number of times the time series is
290 differenced determines the order of integration.

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292 **2.4.2 Co-integration and error correction mechanism**

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294 In order to establish the existence of long-run behavior/equilibrium relationship
295 between the dependent variable GDPPC, co-integration method is used and the
296 independent variable BSC/GDP. In the short run there may be disequilibrium, therefore, we
297 can use the error term in the following equation as the "equilibrium error", to tie the short-run
298 behavior of variables to its long run value. [34] multivariate co-integration technique is used
299 in this paper. Error correction mechanism is obtained by adding one period lagged variables
300 of the error term to the estimated model i.e.

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$$\Delta GDPPC_t = \alpha_0 + \sum_{i=1}^k \beta_i \Delta GDP / GDI_{t-i} + \sum_{i=0}^k \phi_i BSC / GDP_{t-i} + \sum_{i=0}^k \delta_i \Delta TOP_{t-i} + \sum_{i=0}^k \gamma_i \Delta FDI_{t-i} + \sum_{i=0}^k \varphi_i \Delta DR + \theta ECM_{t-1} + \varepsilon_t \dots \dots \dots (ix)$$

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ε_t is the white noise (error term).

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The results are evaluated on three basic criteria of;

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- a priori criterion which examines the signs and magnitudes of parameters of economic relationship in line with economic theory.

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- The statistical or second order criterion that evaluates the statistical reliability of the estimates of the parameters of the model. Student t-statistic, F-statistic R^2 and adjusted R^2 is used for this purpose.

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- Econometric is used to investigate whether the assumption s of the econometric method employed are satisfied in any particular case. The Durbin Watson (DW) test is used to establish the existence of autocorrelation in the model [35].

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3. RESULTS AND DISCUSSION

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3.1 Empirical Findings

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The empirical findings as shown in table 1, indicates that using the Augmented Dicker Fuller (ADF) unit root test, GDPPC, BSC/GDP, DR, FDI and GDP/GDI are integrated of order one (I(1) while top is integrated of order zero i.e. I(0). This implies that the variables except top are stationary at first difference, therefore, are good for the model estimate.

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Table 1.Augmented Dickey-Fuller unit root test

Variables	ADF Statistic		5% Critical		Integration order
GDPPC	0.5086	-3.5586	-2.9378	-2.9399	I(1)
BSC/GDP	-1.7000	-5.4056	-2.9350	-2.9369	I(1)
DR	-1.7643	-7.1743	-2.9358	-2.9378	I(1)
TOP	-4.5648	-7.1784	-2.9399	-2.9399	I(0)
FDI	-0.3538	-5.3077	-2.9378	-2.9399	I(1)
GDP/GDI	-1.8258	-4.2086	-2.9369	-2.9369	I(1)

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3.1.1 Co-integration result

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The co-integration result shows one co-integrating equation at 5 percent level of significance using the Max-Eigen statistic. Because of the existence of at least on co-integrating equation in the model, we conclude the existence of long run relationship between GDPPC, BSC/GDP, GDP/GDI, DR, FDI and TOP.

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3.1.2 Economic development model result

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The estimated model shows that the model is a good fit to the long run relationship between credit market development and economic development in Nigeria. The result indicates that about 77 percent of the variations in the dependent variable (GDPPC) are caused by the

variations in the independent variables (BSC/GDP, GDP/GDI, DR, FDI and TOP). The t-statistic shows all the variables except investment productivity are statistically. Implying that, any economic decision taken on these variables will affect economic development in the country. The high value of F-statistic which is 10.74 shows that the variables in the model are collectively significant we therefore say that the model is a good fit and is reliable for making economic decisions. The Durbin-Watson static of 1.80 is approximately 2.0, we therefore say that an absence of serial auto-correlation in the model. The error correction mechanism (ECM) met the three requirements of; being fractional, negative and statistically significant. This confirms the existence of long run relationship between the dependent and the independent variables. The ECM also indicates high speed of adjustment as about 114 percent of the short term error in the model will be corrected in the long run at a given period.

Table 2. Result from the parsimonious correction model of D((GDPPC))

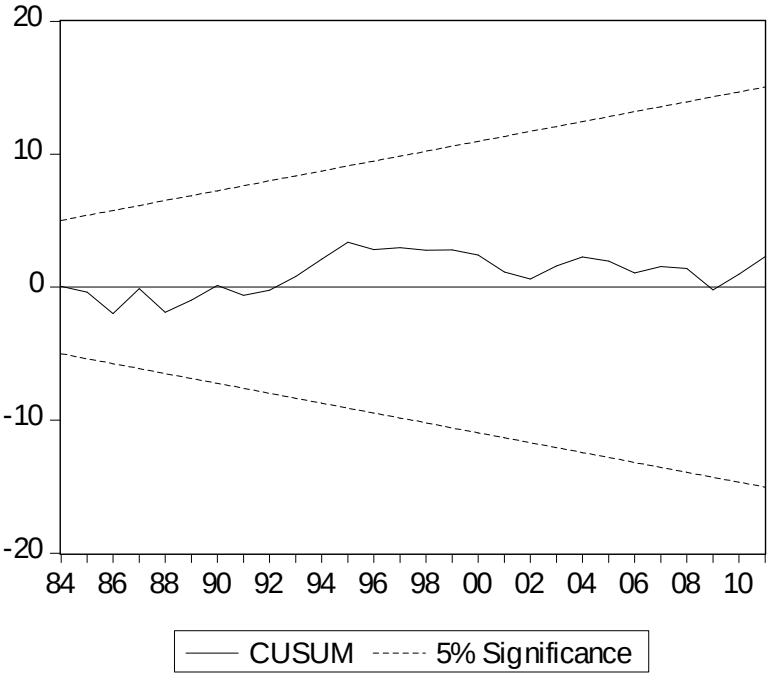
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-87.52319	303.8691	-0.288029	0.7754
D(GDPPC(-1))	0.345159	0.110228	3.131329	0.0040
D(GDPPC(-2))	0.183269	0.106601	1.719208	0.0966
D(GDPPC(-3))	0.683066	0.099055	6.895857	0.0000
D(BSC_GDP(-2))	112.9419	43.10799	2.619977	0.0140
D(BSC_GDP(-3))	121.7605	43.64136	2.790024	0.0094
D(FDI(-1))	-0.008128	0.004723	-1.720814	0.0963
D(GDP_GDI(-2))	0.008448	0.028158	0.300009	0.7664
D(TOP(-2))	-1826.789	463.3046	-3.942954	0.0005
ECM(-1)	-0.379315	0.076216	-4.976805	0.0000
R-squared	0.775409	Mean dependent var		650.3121
Adjusted R-squared	0.703219	S.D. dependent var		3051.276
S.E. of regression	1662.263	Akaike info criterion		17.89068
Sum squared resid	77367283	Schwarz criterion		18.32162
Log likelihood	-329.9229	F-statistic		10.74122
Durbin-Watson stat	1.801526	Prob(F-statistic)		0.000001

Authors' Computation

From the result in Table 2, the income per capita of the past three years (as indicated by the lagged value of GDPPC) show positive and significant effect on the current year's economic development. This means that decision on the current year's economic development should be based on the past years experience because of their economic importance to development in the country. The coefficient of the credit market is positively signed and is also statistically significance at both the second and the third past years which is in line with the supply leading hypothesis of Patrick 1966. The result indicates that 1 percent improvement in the credit market in Nigeria will lead to increase in the level of economic development to about 113 and 122 percent for the past second and third year respectively. In other words, a healthy credit market contributes significantly to the economic development; therefore, it is an important variable in determining the level of economic development in the economy. Foreign direct investment which is negatively signed contrary to the *a priori* expectation is statistically significant. This reveals the importance of FDI to

367 economic development. The result shows that if foreign direct investment is increased by 1
368 percent, the level of economic development will decrease by about 0.8 percent. This may be
369 attributed to the nature of the foreign direct investment in the economy which is basically on
370 the telecommunication and oil and gas sectors with little or no attention to the core
371 manufacturing sector that produces capital goods which will facilitate further development in
372 the economy. GDP/GDI which represents return on investment though correctly signed is
373 statistically insignificant. This shows a positive relationship between the investment
374 productivity and economic development in Nigeria but the relationship is not economically
375 meaningful. This can be linked to the nature of investment embarked upon with investible
376 funds in Nigeria which does not yield the expected return. As a result, return on investment
377 cannot impact significantly to economic development in the country. Trade openness has a
378 contrary empirical result against Stephen 2001 prescription; however, it is statistically
379 significant which made it an important variable in determining the level of economic
380 development in the economy. The negative relationship of trade openness with economic
381 development is as a result of high volume of import over export in the economy. This makes
382 TOP to take more than it gives to the country.

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385 As depicted in figure 3, the CUSUM test shows the stability of the parameters because they
386 settled within the 5 percent confidence limit. Testing the stability of the residuals of the
387 model, the CUSUM of squares in figure 4 indicates that the movements were within the ± 5
388 levels of significance bound.
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393 **Fig. 3. Stability test for parameter**
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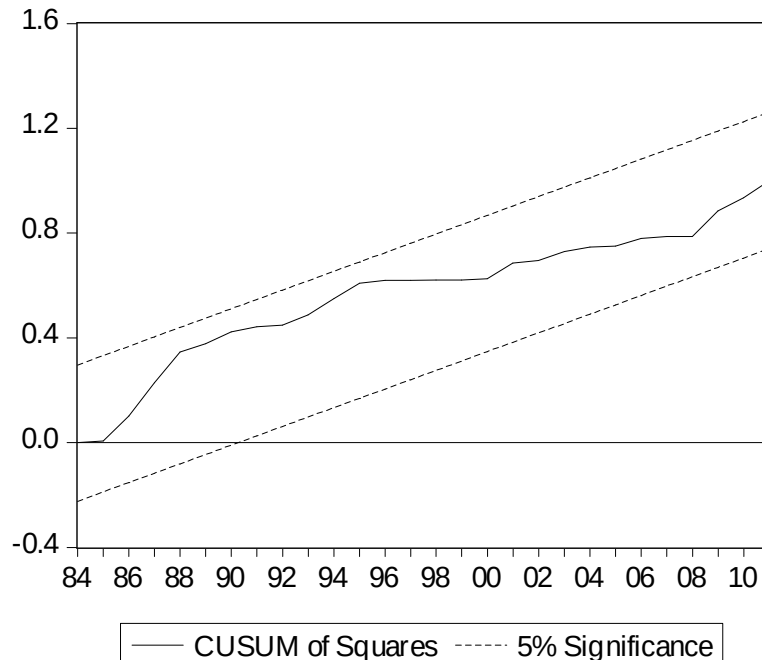


Fig. 4. Stability test for residuals

4. CONCLUSION AND POLICY IMPLICATIONS

This study examines the relationship between credit market and economic development in Nigeria from 1970 to 2012. Error correction mechanism was used and it is observed that credit market's contribution to economic development is positive. Inefficient utilization of credit market funds is responsible for insignificant contribution of return on investment to economic development. This study therefore, advocates the formulation and strict implementation of policies that will enhance efficient utilization of credit market funds so that its positive impact will be sustained in the economy. It was also discovered that the contribution of foreign direct investment to economic development is negative in Nigeria. The following policy implications are drawn from our findings; borrowing in the credit market should be strictly on projects that are productive and have economic importance so that improvement in the market will enhance economic development through return on investment in Nigeria. Decision on the current year's economic development should be based on the past year's experience because its effect on the former is instrumental to development in the economy. Foreign direct investment should be channeled towards manufacturing of capital goods to aid economic development in the country. Lastly, export-led policy which will promote more export and less import should be encouraged to increase the volume of trade openness to improve its effect on the level of economic development in the country.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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