OPTIMUM EXCHANGE RATE TARGETING POLICY: WHAT ROLE DO MONETARY FACTORS PLAY?

Ajibola Arewa ,[1] Ayodele J. Owoputi [2]

[1]Department of Banking and Finance, Lagos State University, Lagos, Nigeria,
[2]Department of Banking and Finance, Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria

E-mail
ajibolaarewa@yahoo.com, (A. Arewa)
ayoowoputi@yahoo.com, (A. J. Owoputi

ABSTRACT

In this study the researchers investigated the interrelationships between exchange rate, monetary policy rate and interest rate over the period 1985 to 2013 with the aim of answering the question what role do monetary factors play in determining exchange rate in Nigeria? A reduced form of structural VAR model was estimated; consequently the innovations were orthogonalized to generate the impulse response functions. Our findings showed that there was significantly positive interrelationship between these variables with the innovations of either monetary policy rate or interest rate passing through to exchange rate and vice versa, but the shocks decayed rapidly to zero in all cases. Therefore, we concluded that monetary factors matter in determining exchange rate and if the factors are efficiently adjusted through appropriate policy, optimal exchange rate can be attained.
***JEL**: C52; F31; E40; E52*
***Keywords:** orthogonality, innovations, shocks, optimum, structural VAR.*

1. INTRODUCTION

Exchange rate targeting policy is a crucial monetary element tilted to achieve optimum currency rate in a face of declining or even stable economy. Obviously the monetary authority of a country makes conscious policy to fix exchange rate at a specific target that could enable it to achieve sustainable growth. However, in making this policy, monetary policy factors must be adjusted toward the targeted or equilibrium rate. The critical issue here is probably to look at how targeted exchange rate through monetary factors could influence overall growth. For instance, Levy-Yeyati and Sturzenegger (2003) affirm that floating rates propel an increase in economic growth for a sample of emerging market countries. While Gosh, Gulde and Wolf (2003) believe that the exchange rate regime does not matter for growth, but the real exchange rate is a significant determinant of aggregate growth.

It is seemingly true that for a country to initiate and maintain long term growth; optimum real exchange rate must be achieved through periodic or frequent adjustment of monetary factors such as: monetary policy rate, interest rate and inflationary rate. That is why Azid, Jamil and Kousar (2005) said that real exchange rate is a measure of a country's international competitiveness which helps to identify inflationary rate and currency effects, and represents the relative cost or price expressed in common currency. Real exchange rate is one of the macroeconomic policies that can eventually boost a country's output (see, Akinbobola & Oyetayo, 2010) . Eme and Johnson (2011) concluded that improvements in exchange rate management are necessary but not adequate to revive the Nigerian economy. Olga and Henrike (2014) confirmed that the impact of an exchange rate shock on prices seems to slightly decrease across time.

Therefore, the focus of this research work is to investigate how monetary policy factors could be adjusted to attain expected or targeted real exchange rate so as to sustain long term growth in Nigeria. Explicitly, a time varying VAR model is developed in tandem with the VAR specification adopted in the study of Olga and Henrike (2014) for Poland economy. In view of this, our study provides immense contribution to the studies of Eme and Johnson (2011), and Oyovwi (2012) both in Nigeria. The rest of this work is presented in sections: literature review, methodology and data description, result, summary and conclusion.

2. LITERATURE REVIEW

A number of studies have been consummated on the link between one or some of the monetary factors and exchange rate. For example, the study of Aghion, Bacchetta and Banerjee (2000, 2001) provided overwhelming evidence in support of the possibility that a rise in interest rate could lead to depreciation of exchange rate. This possibility is based on a certain range of parameters which may arise from the fact that an increase in domestic interest rate raises the cost of investment and consequently reduces output. Thus, the future demand for money will drastically fall below average out-rightly leading to exchange rate depreciation. Kraay (2003) documented during the periods of crises that higher interest rates is not an indication for defending exchange rates that is under pressure of perpetual depreciation.

Guo (2007), Gourio, Siemer and Verdelhan (2010) in a series of studies developed the disaster risk models and confirmed a non-monotonic association between interest rate and the values of foreign exchange. In the same token, Blanchard (2005) initiated the fiscal dominance models and established that high level of indebtedness could lead to an asymmetric relationship between exchange rates and interest rate. Blanchard's study

was strongly supported by Gonçalves and Guimarães (2011). Omotor (2008) investigated the nexus between exchange rate reform and inflationary trend. The author confirmed that exchange rate reform policy and money supply were joint determinants of inflation. Yoon, (2009) showed persuasive evidence that real exchange rate series followed a non-random frame-walk during the era of fixed exchange rate system; but however, more stationary cases are evident in the gold standard and the Breton-Wood regimes. Yoon vindicated that the behavior of real exchange rate took different fashions depending essentially on the exchange rate system. Odusola and Akinlo (2005) examined the relationship between exchange rate depreciation, inflation and output. They concluded that exchange rate depreciation has exerted medium and long-run expansionary effects on output; but maintained short-run contracsionary influence.

Kamin and Khan (2003) provided a thorough intra-country examination on the association between inflation and exchange rate. They discovered that a significant relationship existed between inflation rate and real exchange rate in most Asian and Latin American countries. Also, they documented that the intensity of exchange rate changes on inflation rate was higher in Latin American nations than those in Asia and industrialized worlds. Aliyu (2011) affirmed that exchange rate appreciation has the tendency to increase the volume of imports but decrease exports; while depreciation potentially forces imports to fall drastically but stimulates exports. Thus, the policy of depreciation is a switching policy that creates the possibility of switching from imports to exports which alternatively has positive impact on the economy of a country that depreciates. Yamada (2013) adopted a propensity score matching function to carry out potential comparisons in the outcomes of inflation in three systems: regime of iinflation targeting, regime of fixed exchange rate and the regime of flexible and non-inflation targeting. The results revealed that there is lower rate of inflation in the systems of both inflation and fixed exchange rate targeting than the flexible exchange rate and non-inflation targeting systems. Ghosh (2014) examined randomly selected markets in emerging economies and discovered that trade openness gives rise to the possibility of adopting a fixed currency regime in these markets

Akpan (2008) investigated the petroleum based economy of Nigeria on the relationship between foreign exchange market and economic growth and documented strong evidence of positive relationship. Asher (2012) carried out a study using Nigerian data on exchange rate fluctuation and economic growth over the period 1980- 2010. The study adopted a methodology synonymous to the existing methods to confirm direct nexus between real exchange rate and economic growth. Azeez, Kolapo and Ajayi (2012) examined the effect of exchange rate volatility on the performance of Nigerian macroeconomic variables. They found that exchange rate and GDP are positively related.

Equally Obansa et al (2013) confirmed that exchange rate has a strong impact on economic growth in Nigeria. Adeniran, Yusuf and Adeyemi (2014) employed static regression equation to investigate the impact of exchange rate fluctuations on the economic growth of Nigeria. They fitted annualized data into the equation and confirmed that exchange rate has positive but not significant impact on the economic performance of Nigeria. Thus, they concluded that the switching from fixed to flexible exchange rate system has positive impact On the contrary, Opaluwa, Umeh and Ameh (2012) examined the effect of exchange rate fluctuations on the Nigerian manufacturing industry . They found that there is existence of non-monotonic relationship between exchange rate volatility and the performance of the manufacturing sector. Even the study by Eme and Johson (2012) established absence of strong evidence of positive relationship between exchange rate variations and growth rate in Nigeria, but it found monetary factors to be direct determinant of growth.

3. METHODOLOGY AND DATA

Since the introduction of VAR model by Sim (1980), the model has been subsequently used to investigate the dynamic relationships between/among multivariate time series variables. To be precise, plethora of studies have applied VAR in estimating the dynamic relationship between exchange rate and monetary factors. For example, Creel and Levasseur (2005) and Lyziak et al. (2012) have developed standard VAR for exchange rate-monetary policy relationship. While Jarocinski (2010) employed structural Bayesian VAR in his study; , Coricelli et al. (2006) utilized co integrated VAR However, We adopted structural VAR that is closely related to the specification of Olga and Henrike (2014). Given that all the specified variables (exchange rate, monetary policy rate and interest rate) are taken to be endogenous and are represented by x, the proposed SVAR with p lag length for this study can be expressed as:

$$w_0 X_t = a_0 + w_1 X_{t-1} + w_2 X_{t-2} + \ldots + w_p X_{t-p} + \varepsilon \qquad (1)$$

The disturbance term (ε_t) is subject to the following conditions:
$E(\varepsilon_t) = 0$; the mean of the disturbance term must be zero
$E(\varepsilon_t \varepsilon'_t) = \Omega$; the covariance matrix of disturbance terms is Ω that is a $k \times k$ positive-semi-definite matrix
$E(\varepsilon_t \varepsilon'_{t-k}) = \sum$; implying absence of serial correlation in the individual disturbance term (i.e. the structural shocks are not correlated).
Where: w_0 is a k x k diagonal matrix; a_0 is a $k \times 1$ vector; w_i is a $k \times k$ matrix and ε_t is a $k \times 1$ vector.

Since, we proposed a three variable SVAR model, equation 1 can be written in matrix form as:

$$\begin{pmatrix} 1 & w_{012} & w_{013} \\ w_{021} & 1 & w_{023} \\ w_{031} & w_{032} & 1 \end{pmatrix} \begin{bmatrix} x_{1t} \\ x_{2t} \\ x_{3t} \end{bmatrix} = \begin{bmatrix} a_{01} \\ a_{02} \\ a_{03} \end{bmatrix} + \begin{pmatrix} w_{111} & w_{112} & w_{113} \\ w_{121} & w_{122} & w_{123} \\ w_{131} & w_{132} & w_{133} \end{pmatrix} \begin{bmatrix} x_{1t-1} \\ x_{2t-1} \\ x_{3t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \end{bmatrix} \quad (2)$$

Divide through by the w_0 and obtained the reduced form of the SVAR as:

$$X_t=(w_0)^{-1}a_0+(w_0)^{-1}w_1X_{t-1}+(w_0)^{-1}w_2X_{t-2}+\ldots+(w_0)^{-1}w_pX_{t-p}+(w_0)^{-1}\mu_t \quad (3)$$

Let: $(w_0)^{-1}a_0 = a$; $(w_0)^{-1}w_i=z_i$ and $(w_0)^{-1}\varepsilon_t = \varepsilon_t$; then the equation can be rewritten as:

$$X_t=a+z_1X_{t-1}+z_2X_{t-2}+\ldots+z_pX_{t-p}+\mu_t \quad (4)$$

Bring the lag operator L into equation 4:

$$X_t=a+z_1LX_t+z_2L^2X_t+\ldots+z_pL^PX_t+\mu_t \quad (5)$$

$$X_t-(z_1LX_t+z_2L^2X_t+\ldots+z_pL^PX_t)=a+\mu_t \quad (6)$$

$$(1-z_1L-z_2L^2-\ldots-z_pL^P)X_t=a+\mu_t \quad (7)$$

Therefore:

$$ZLx_t = a+\mu_t \quad (8)$$

The error term ε_t in equation 1 is a vector of the structural innovations which can be expressed as a linear combination of the disturbance term μ_t in equation 8. Thus:

$$\varepsilon_t = B\mu_t \sim (0, \sum_t) \quad (9)$$

Where:

$$\sum_t = B\sum_\mu B' \quad (10)$$

Also, according to Lutkepohl (2005) ε_t follows the moving average (MA) of order p represented in equation1.

$$X_t = d_0\varepsilon_t + d_1\varepsilon_{t-1} + d_2\varepsilon_{t-2} + \ldots + d_p\,\varepsilon_{t-p} \quad (11)$$

$d_i = q_i A^{-1}$; $q_0 = g_k$; $q_i = \sum_{i=1}^{j} q_{i,j} A_j$. Therefore, the element of the d_i matrix is the response of the structural innovations ε_t

3.2. Data

Raw data on exchange rate, monetary policy rate and interest rate are collected from the CBN statistical bulletin for the period 1985 t0 2013. In order to attain stationarity, we integrated the data to order one. This enabled us to examine the interrelationships between these variables based on their percentage changes.

4. RESULTS

The main object of this study is to investigate the possibility of attaining optimum exchange rate by adjusting monetary policy rate and interest rate through appropriate policy making of the Nigerian monetary authority. To achieve this, we develop structural VAR model and obtain the impulse response functions in line with Lutkepohl (2005). However, the validity of this model results depends on whether the series of our specified variables are stationary. Therefore, the first task is to check for unit root.

4.1. Unit-root Test

We employ ADF test on the log of first difference of the specified variable series. The test results are summarized in Table 1.

Table 1: ADF Unit-root Test Result

Variable series	ADF-stat	1% critical value	5% critical value	10% critical value
Lgdfexc	*-4.93*	*-3.73*	*-2.99*	*-2.63*
Lgdfmpr	*-6.20*	*-3.73*	*-2.99*	*-2.63*
lgdfitr	*-6.76*	*-3.73*	*-2.99*	*-2.63*

Note that Lgdfexc, Lgdfmpr and lgdfitr ore the log deference of exchange rate, monetary policy rate and interest rate respectively.

Source: Extracted from STATA Window 13

The ADF statistics are -4.93, -6.20 & -6.76 for the series of exchange rate, monetary policy rate and interest rate respectively; while the associated critical values are -3.73, -2.99 & -2.63 at 1%, 5% & 10% respectively as reported in table 1. Therefore, in all cases, the null hypothesis that these series have unit roots is rejected. However, this stationarity is attained at first deference

suggesting that we can now measure the percentage changes in each of these series and in their relationship. The movements of these series can be demonstrated in figures as shown below:

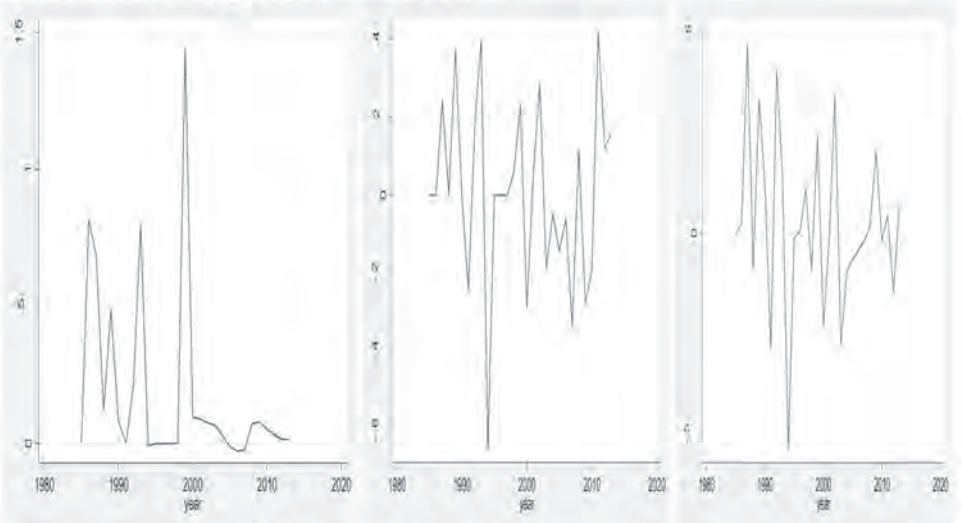


Figure 1: Separate Movements of Exchange Rate, Monetary Policy Rate and Interest Rate from 1985 to 2013

A visual view of figure 1 shows that the movements of exchange rate reached the peak in the period between 1999 and 2000 and then started declining vigorously until the year 2007; and started rising again gradually reached a certain height in 2010 and declined. The period of peak was associated with the transition from consistently bastardized military governed economy to democratized set up. The effect of military rule on the exchange rate was quickly absorbed within a period, less a year and the volatility of the exchange rate started decaying rapidly, until 2007 when the Nigerian economy was rocked with global financial crisis. Consequently the net effect of this dragon king was short lived probably due to the adjustments in monetary policy rate which invariably and inevitably affected interest rate. The movements of these two rates are also demonstrated in figure 1. They appear to be more clustering than the exchange rate in Nigeria; falling faster than the exchange rate over the sampling period. Thus, their combine movements are presented in figure 2.

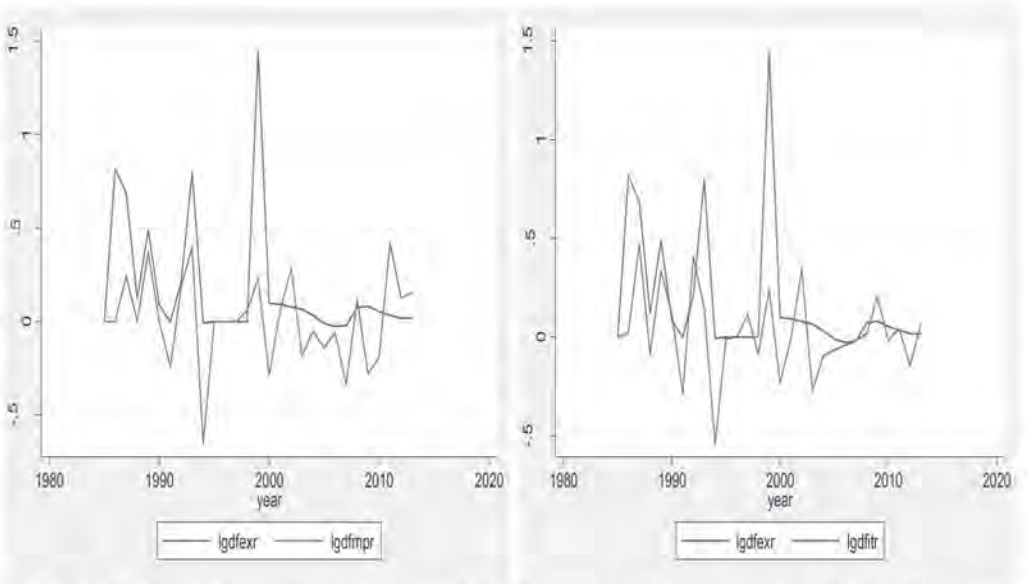


Figure 2: Combine Movements of Exchange Rate, Monetary Policy Rate and Interest Rate from 1985 to 2013

Figure 2 shows the combined movements of exchange rate and monetary policy rate, also, exchange rate and interest rate concisely. Overall, we can see that a rising trend in exchange rate is in most cases, immediately followed by a decline in both monetary policy rate and interest rate. Hence, monetary policy rate is truly a controlled variable instrument that implicitly adjusts other rates through effective allocation of resources.

4.2 Lag Length Selection

Selecting optimal lag is very crucial when estimating SVAR since sup-optimal lag length can possibly inversely affect the significant level of the parameters. We strictly follow the optimal lag selected by Akeike Information Criterion (AIC) which is 7. See the appendix for this result in table 3. Since our sample size is relatively small, the choice of using AIC approach is appropriate for this study. Thus, our proposed SVAR estimate is based on lag 7 and the results are reported in table 4.

Table 4 The Result of the Interrelationship between Exchange-rate, Monetary-policy-rate and Interest Rate

Matrix a	coef.	Std. Err.	Z	p>/z/
/a_2_1	-0.351	0.116	-3.31	0.001
/a_3_1	-0.170	0.096	-1.78	0.076
/a_3_2	-0.489	0.133	-3.66	0.000
Matric b	coef	Std. Err	z	p>/z/
/b_1_1	0.319	0.044	7.35	0.000
/b_2_2	0.193	0.026	7.35	0.000
/b_3_3	0.134	0.182	7.35	0.000

Source: Extracted from STATA Window 13

Table 4 displays the parameters of a and b matrices estimated from the reduced form of the Structural VAR (equation 4). The estimates of the a *2 1; a 3 1 & a 2 3* parameters are negative, while the contemporaneous effect are found to be positive and significant as shown by the parameters *b 11; b22 & b33* in the matrix. Thus, the null hypothesis that the parameters in both matrices are not significantly different from zero is rejected; suggesting that exchange rate, monetary policy rate and interest rate positively influence one another in Nigeria. An increase in monetary policy rate increases interest rate; which equally triggers up the units of Naira that is exchanged for one unit of Dollar. Therefore, the optimum exchange rate in Nigerian was attained during the period (early 1990s) where the movements of the exchange rate were relatively stable (see figure 1). In the first 8 periods of our analysis, we try to examine the response of each of these variables against itself and with one another. The results are reported in Table5 and Figure 3.

The results of the impulse response are reported in 9 quadrants as shown in table 5 with a key at the bottom of the table. The response in exchange rate to its innovations, the response in monetary policy rate to its innovations and the response in interest rate to its innovations are respectively presented in quadrants 1, 5 & 9. The response in exchange rate to its own shocks decays rapidly. This is also evident in monetary policy and interest rate confirming the initial position that the series are respectively stationary. The response in exchange rate to the shocks of monetary policy and interest rate are presented in quadrants 2 & 3 in which the shocks of exchange rate affect monetary policy rate more than interest rate; however the shocks do not persist for a long time. In the same vein, the effects of the shocks of monetary policy on exchange rate and those of interest rate on exchange rate are presented in quadrants 4 & 7. The shocks in both cases do not persist because they are quickly reduced to zero. Finally the response in monetary policy to interest

rate decreases rapidly and vice versa. Emphatically, we also demonstrate these analyses in figure 3 below.

Table 5 Impulse-Response Result on the Breakdown Effects in the System

Step	(1)	(1)	(1)	(2)	(2)	(2)	(3)	(3)	(3)
	Sirf	Lower	upper	Sirf	Lower	upper	Sirf	Lower	upper
0	0.032	0.023	0.404	0.123	0.043	0.206	0.114	0.045	0.183
1	0.027	-0.086	0.140	-0.638	-0.147	0.019	-0.045	-0.120	0.030
2	-0.019	-0.134	0.095	0.002	-0.823	0.087	-0.024	-0.100	0.051
3	-0.005	-0.607	0.051	0.011	-0.027	0.066	-0.022	-0.022	0.069
4	-0.004	-0.036	0.028	-0.005	-0.036	0.027	-0.009	-0.041	0.024
5	0.003	-0.017	0.231	-0.003	-0.241	0.018	-0.003	-0.024	0.019
6	-0.013	-0.009	0.068	0.001	-0.010	0.012	0.003	-0.009	0.015
7	-0.001	-0.006	0.048	0.010	-0.005	0.007	0.0003	-0.006	0.006
8	0.001	-0.002	0.004	-0.0002	-0.004	0.004	-0.003	-0.005	0.004
Step	(4)	(4)	(4)	(5)	(5)	(5)	(6)	(6)	(6)
	Sirf	Lower	upper	Sirf	Lower	upper	Sirf	Lower	upper
0	0	0	0	0.193	0.141	0.244	0.094	0.038	0.151
1	0.014	-0.102	0.130	-0.022	-0.105	0.061	-0.050	-0.125	0.025
2	-0.007	-0.120	0.106	-0.042	-0.125	0.041	-0.038	-0.112	0.036
3	-0.014	-0.066	0.037	0.012	-0.038	0.062	0.022	-0.027	0.071
4	-0.003	-0.039	0.034	0.009	-0.025	0.043	0.005	-0.027	0.037
5	0.006	-0.016	0.027	-0.004	-0.030	0.022	-0.006	-0.033	0.021
6	0.0001	-0.009	0.010	-0.003	-0.015	0.010	-0.0004	-0.012	0.011
7	-0.002	-0.008	0.005	0.002	-0.008	0.011	0.001	-0.008	0.011
8	0.0003	-0.003	0.004	0.001	-0.004	0.006	0.001	-0.005	0.005
Step	(7)	(7)	(7)	(8)	(8)	(8)	(9)	(9)	(9)
	Sirf	Lower	upper	Sirf	Lower	upper	Sirf	Lower	upper
0	0	0	0	0	0	0	0.134	0.098	0.169
1	0.002	-0.112	0.112	-0.004	-0.084	0.076	-0.036	-0.106	0.035
2	0.035	-0.078	0.148	0.004	-0.081	0.090	0.008	-0.069	0.085
3	-0.007	-0.036	0.023	-0.006	-0.052	0.040	-0.001	-0.048	0.047
4	-0.002	-0.023	0.018	0.003	-0.016	0.024	-0.001	-0.023	0.020
5	0.001	-0.008	0.011	0.001	-0.013	0.015	0.002	-0.016	0.019
6	-0.001	-0.006	0.005	-0.001	-0.008	0.005	-0.001	-0.010	0.007
7	0.001	-0.003	0.003	0.0002	-0.003	0.003	0.0002	-0.003	0.004
8	-0.001	-0.002	0.002	0.0002	-0.001	0.002	0.003	-0.002	0.003

Source: Extracted from STATA Window 13

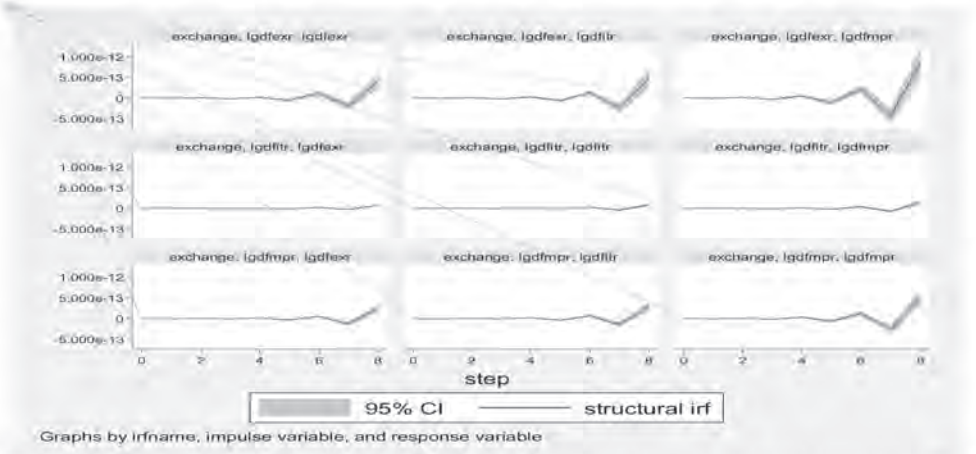


Figure 3 Impulse Response Function Graph Showing the Movement of Specified Variable Shocks

In figure 3, the blue colored line is the impulse response function moving inside the grey band 95% confidence interval. The 9 figures represent the 9 quadrants which we have discussed above. All the figures are essentially the same confirming our previous discussion. Thus, monetary policy shocks affect exchange rate; likewise interest rate shocks but the shocks die quickly in both cases overtime.

5. CONCLUSIONS AND RECOMMENDATION

This study deals with the range of issues surrounding the attainment of optimal exchange rate target as a product of efficiently managed monetary policy and interest rates. The interdependence of these variables is investigated with the aim of providing answer to the question the role monetary factors play in determining optimum exchange rate. Our findings reveal that monetary policy affects interest rate positively thereby yielding positive externality on the changes in exchange rate. Therefore, this position strongly negates the findings of Guo (2007), Gourio, Siemer and Verdelhan (2010) as well as Gonçalves and Guimarães (2011). Also, monetary policy and interest rate shocks significantly affect the variations in exchange rate overtime. Hence, we can conclude that monetary policy factors play significant role in determining exchange rate. Based on these findings, we recommend that the Central Bank of Nigeria should maintain stable bank rate,

minimum rediscounting rate or monetary policy rate to sustain concessionary interest rate which will in turn foster for relatively stable exchange rate.

REFERENCES

Adeniran, J. O, Yusuf, S.A., & Adeyemi, O. A. (2014). The impact of exchange rate fluctuation on the Nigerian economic growth: an empirical investigation. *International Journal of Academic Research in Business and Social Sciences*. 4(8): 224-233.

Aghion, P., Bacchetta, P., & Banerjee, A. (2000). A simple model of monetary policy and currency crises. *European Economic Review*. 44; 728–738.

Aghion, P., Bacchetta, P., & Banerjee, A. (2001). Currency crises and monetary policy in an economy with credit constraints. *European Economic Review*. 45; 1121-1150.

Akpan, P.L (2008). Foreign exchange market and economic growth in an emerging petroleum based economy: Evidence from Nigeria (1970-2003). *African Economic and Business Review* 6(2):46-58.Akinbobola, T . O., & Oyetayo, O . J. (2010). Econometric analysis of real exchange rate and domestic output growth in Nigeria. *International Journal of Academic Research*. 2(5); 339-344.

Aliyu, S.R.U. (2011). Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation, Research Journal of International Studies. 11(3): 103 –120.

Asher O. J. (2012). The impact of exchange rate fluctuation on the Nigerian economic growth (1980 – 2010). Unpublished B.sc Thesis, Caritas University Nigeria.

Azeez, B.A., Kolapo, F.T and Ajayi, L.B (2012). Effect of exchange rate volatility on macroeconomic performance in nigeria. *Interdisciplinary Journal of Contemporary Research in Business*. 4(1): 149-155.

Azid T, Jamil, M., & Kousar, A. (2005). Impact of exchange rate volatility on growth and economic performance: a case study of Pakistan. *The Pakistan Development Review*. 44(4); 749-775.

Blanchard, O. (2005). Fiscal dominance and inflation targeting: Lessons from Brazil. In Giavazzi, F., I. Goldfajn and S. Herrera (eds.) Inflation Targeting, Debt and the Brazilian Experience. MIT Press.

Creel, J., & Levasseur, S. (2005). Monetary policy transmission mechanisms in the ceecs: how important are the differences with the euro area? Available at SSRN 826284.

Coricelli, F., Jazbec, B., and Masten, I. (2006). Exchange rate pass-through in EMU acceding countries: empirical analysis and policy implications. *Journal of Banking & Finance*, 30(5):1375–1391.

Eme, O. A., & Johnson A. (2011). Effects of exchange rate movements on economic growth in Nigeria. *CBN Journal of Applied Statistics*. 2 (2); 1-14.

Gosh A, Gulde A.M., & Wolf, H. (2003). Exchange Rate Regimes: Choices and Consequences. MIT Press, Massachusetts.

Ghosh, A. (2014). A comparison of exchange rate regime choice in emerging markets with advanced and low income nations for 1999–2011. *International Review of Economics &Finance*. 33, 358–370.

Guo, K. (2007). Exchange Rates and Asset Prices in an Open Economy with Rare Disasters. Mimeo. Harvard University.

Gourio, F., Siemer, M,. & Verdelhan, A. (2010). International Risk Cycles. Mimeo. Boston University.

Gonçalves, C.E., & Guimarães, B. (2011). Monetary policy, default risk and the exchange rate. *Revista Brasileira de Economia*. 65(1); 33-45.

Kraay, A. (2003). Do high interest rates defend currencies during speculative attacks? *Journal of International Economics*. 59(2); 297-321.

Kamin, S. B. & Khan, M. (2003). A multi-country comparison of the linkages between inflation and exchange rate competitiveness?. *International Journal of Finance and Economics*. 8; 167-183.Jaroci´nski, M. (2010). Responses to Monetary Policy Shocks in the East and the West of Europe: A Comparison. Journal of Applied Econometrics, 25(5):833–868.

Lutkepohl, H. (2005). New Introduction to Multiple Time Series Analysis. Springer Verlag.

Lyziak, T., Demchuk, O., Przystupa, J., Sznajderska, A., & Wrobel, E. (2012). Monetary policy transmission mechanism in poland-what do we know in 2011? National Bank of Poland Working Paper No. 116.

Levy-Yeyati E., & Sturzenegger, F. (2003). To Float or to Fix: Evidence on the Impact of Exchange Rate Regimes on Growth. *American Economic Review*. 93(4). 1173-1193.

Obansa, S. A. J., Okoroafor, O. K. D., Aluko, O. O., & Millicent, E. (2013). Perceived relationship between exchange rate, interest rate and economic growth in Nigeria: 1970-2010. *American Journal of Humanities and Social Sciences*. 1(3): 116-124.

Odusola, A. F., & Akinlo, A. E. (2005). Output, inflation, and exchange rate in developing countries: an application to Nigeria. *The Development Economies* 39; 199-222.

Omotor, D. G. (2008). Exchange rate reform and its inflationary consequences: the case of Nigeria. *Ekonomski Pregled*, 59 (11); 688-716.

Olga, A., & Henrike, M. (2014). The impact of monetary policy and exchange rate shocks in Poland: evidence from a time-varying VAR. European Central Bank Working PaPer Series no 1636

Oyovwi, O. D. (2012). Exchange rate volatility and economic growth in Nigeria. *Mediterranean Journal of Social Sciences*. 3(3); 399-407.

Opaluwa D, Umeh J.C, & Ameh A.A, (2012). The effect of exchange rate fluctuations on the Nigerian manufacturing sector African Journal of Business Management 4(14): 2994 – 2998.

Sims, C.A. (1980). Macroeconomics and reality. Econometrica: *Journal of the Econometric Society*. 468(1): 1–48.

Yamada, H. (2013). Does the exchange rate regime make a diff erence in inflation performance in developing and emerging countries? The role of inflation targeting. *Journal of International Money and Finance*. 32, 968–989.

Yoon, G. (2009). Are real exchange rates more likely to be stationary during the fixed nominal exchange rate regime? *Applied Economic Letters*. 16; 17-22.

Appendix

Table 3 Result of Optimum Lag Length Selection

Selection-order criteria

Sample: 1992 - 2013 Number of obs = 22

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	5.26186				.000163*	-.205623	-.170576	-.056845
1	10.9385	11.353	9	0.252	.000224	.096496	.236687	.69161
2	14.3092	6.7412	9	0.664	.000395	.608259	.853593	1.64971
3	19.1895	9.7606	9	0.370	.000665	.982777	1.33325	2.47056
4	25.1975	12.016	9	0.212	.001195	1.25477	1.71039	3.18889
5	36.0912	21.787	9	0.010	.001917	1.08262	1.64338	3.46307
6	70.0601	67.938	9	0.000	.000878	-1.18728	-.521375	1.63951
7	2154.76	4169.4*	9	0.000	.	-189.887*	-189.116*	-186.614*

Endogenous: lgdfexr lgdfmpr lgdfitr

Exogenous: _cons

MODELLING AND FORECASTING STOCK MARKET VOLATILITY IN NIGERIA USING POWER-GARCH MODELS: DOES THE CONDITIONAL DISTRIBUTION OF ERROR HAVE IMPLICATIONS?

Ibrahim Mohammed[1]

[1]Department of Business Administration, Faculty of Administration, Ahmadu Bello University Zaria, Nigeria.

E-mail
imohammed@abu.edu.ng

ABSTRACT

Modeling and forecasting stock market volatility have become an important part of the financial literature in recent times. This is especially true for emerging markets like Nigeria that have become preferred investment destinations for foreign investors in the past decade, and especially after the global financial crisis. There are quite a number of studies that modeled volatility in the Nigerian stock market, but only a few paid attention to forecasting volatility and the effect of conditional error distribution on the validity of results. Hence, the objective of this paper is to model and forecast stock market volatility for the Nigerian Stock Exchange Banking Index, Consumer Goods Index, Insurance Index and the NSE30 Index under the assumption of normal, student's t and generalized distribution assumptions for the conditional errors, with a view to selecting which model fits better. The study utilized daily closing values of the four indexes from 16th December 2009 to 3rd February 2014 which were converted to continuously compounded returns. Results for volatility modeling revealed that there is significant ARCH and positive leverage effects for all the four return series. Similarly, the power parameter of the PGARCH model was found to be significant, suggesting the appropriateness of the models. However, no significant evidence of volatility clustering was observed. In terms of fitness, the Banking Index, Consumer Goods Index and the Insurance Index volatility models all fitted better under the student's t-distribution assumption, while the NSE30 Index fitted best under the Generalized Error Distribution (GED) assumption. However, results for volatility forecast showed that the Banking Index and NSE30 Index fitted better with normal distribution, while the Consumer Goods Index forecast fitted with GED and the Insurance Index fitted with student's t-distribution. The study concluded that stock return volatility in Nigeria does not follow a normal distribution pattern. There is thus the need for future studies to model and forecast volatility by selecting the appropriate error distribution to avoid mis-specification and spurious results.

JEL Classification: C16, C22, G10, G12
Keywords: Stock market, Volatility, Nigeria, Error Distribution

1. INTRODUCTION

The relevance of stock markets in mobilizing and attracting funds for long-term investments that will guarantee economic growth cannot be

overstressed. Among the prominent factors that attract investment to stock markets are the market return and the associated risk. According to Fama (1970), a stock market is said to be weak-form efficient if current prices fully reflect all information available in past prices such that no profitable trading rules can be explored to beat the market. However, subsequent studies such as Poterba and Summers (1988) and Ding, Granger and Engle (1993) have shown that unlike stock prices, stock market returns are mean-reverting, suggesting that not all stock prices follow a random walk. These findings prompted scholars to pay special attention to the study of the stylized facts about stock markets such as volatility of returns.

According to Bonga (2012), volatility is a measure of dispersion around the mean or average return of a security. Olowe (2009) argued that the traditional measure of volatility is the standard deviation or variance but however, the unconditional standard deviation or variance is in itself not informative as it does not reveal interesting patterns about the volatility behaviour of the financial asset such as persistence and time-varying properties. This major defect compelled econometricians to develop more robust models that have the ability to model the conditional variance of a financial asset over time referred to as Autoregressive Conditionally Heteroskedastic (ARCH) models.

Engle (1982) was the first to model volatility using ARCH models by relating the conditional variance of the disturbance term to the linear combination of the immediately past squared disturbances. However, the ARCH model of Engle (1982) was unable to relating the conditional variance to the linear combination of various lags of the disturbance term. This weakness lead to the development of the Generalized Autoregressive Conditionally Heteroskedstic (GARCH) models by Bollerslev (1986). Since then, variants of the GARCH family such as the Exponential GARCH (EGARCH) developed by Nelson (1991), the GJR-GARCH developed by Glosten, Jagannathan, and Runkle (1993), the Threshold GARCH (TGARCH) developed by Zakoian (1994), and the Power GARCH (PGRACH) generalized by Ding, Granger and Engle (1993) have emerged. According to Bollerslev (1986), Chiang and Doong (2001) and Engle (1982), ARCH/GARCH models are the best when studying stylized facts about stock market volatility because they are capable of capturing the time varying nature of volatility, and also provide insights into different volatility behaviour such as volatility persistence, volatility clustering and asymmetric effects in stock market returns.

According to Atoi (2014), Guidi and Gupta (2012) and Karansos and Kim (2006), recent studies have shown the validity of the asymmetric PGARCH model in modeling and forecasting volatility. The increasing popularity of the model emanates from the flexibility of the power exponent so

that the models is itself allowed selection the appropriate power without imposition. Similarly, the strength and popularity of the model in the volatility forecast contest was also affirmed by Franses and Ghijsels (1999). These reasons informed the choice of PGARCH model for this study.

The study of stock return volatility has become very important in recent times, and the reasons for this development are not farfetched. Aside the fact that stock market volatility provides a measure of stock market risk, it also has implications for market efficiency, stock market bubbles and crashes. Furthermore, volatility plays a crucial role in explaining risk-return relationships for stock markets, and by implication market participants' assessment of pricing behaviour and investment alternatives. Thus, understanding volatility in stock markets helps in the determination of cost of capital and evaluation of asset allocation decisions (Emenike, 2010). Understanding stock market volatility is therefore of importance to investors, analysts, brokers, regulators and policy makers.

Stock market volatility studies have become even more important for emerging stock markets like Nigeria because emerging stock markets appeared to be more insulated from the contagion effect of financial crises spillovers relative to their developed counterparts, and thus become preferred destinations for investors during periods of economic turmoil. Being one of the biggest economies in Africa and the largest in Sub-Sahara Africa, Nigeria harbours one of the biggest stock markets in terms of market capitalization and trading volume (Ikhazoboh, 2013). Understanding the volatility associated with the Nigerian stock market will be of utmost utility to local and foreign investors, and to policy makers in terms of planning for economic growth and development. Given its size, the Nigerian stock market can be thought of as truly representative of the West African sub-region.

However, despite the importance of understanding volatility in stock markets and the empirical evidence that stock returns hardly follow normal distribution, a number of studies in Nigeria have concentrated only on modeling volatility under the assumption that conditional errors are normally distributed. According to Bollerslev (1986) and Brooks (2008), stock market returns exhibit excess kurtosis and fat-tails, making it very hard for their conditional errors to follow normal distribution, and this fact has been proven as true for the Nigerian Stock Exchange (NSE) returns by Emenike (2010). This implies that volatility modeling and forecasting undertaken under the normal distribution assumption may lead to mis-specification and spurious results (Atoi, 2014; Guidi & Gupta, 2012). Furthermore, no study has to the best of the researcher's knowledge modeled and forecasted volatility from the dimension of the four sub-categories of the NSE All Share Index (ASI): the Banking Index, the Consumer Goods Index, the Insurance Index and the NSE30 Index.

Consequently, this study aims to model and forecast volatility for the Banking Index, the Consumer Goods Index, the Insurance Index and the NSE30 Index using PGARCH models under the assumption that conditional errors follow a normal, student's t and generalized distribution patterns. The ultimate goal is to select the model and forecast that best explains the nature and behaviour of volatility for the Banking Index, the Consumer Goods Index, the Insurance Index and the NSE30 Index.

The study uniquely contributed to the existing literature on volatility in Nigeria in a number of ways. First and foremost, the study employed a sample of daily observations spanning many years and covers as recent as 2014. The study also analyzed the four disaggregated sub-categories of the NSE Index, which facilitates more in-depth understanding of volatility for investors and other market agents than previous studies have reported. Most importantly, the study analyzed the implications for the assumed distribution of conditional errors of return with a view to understanding which distribution best explains the NSE volatility behaviour.

The remainder of the paper is structured as follows: section two reviews empirical literature and identifies the underpinning theoretical framework, section three discusses the methodology employed, section four presents and discusses results, and section five draws conclusions.

2. LITERATURE REVIEW

A fact well-known in the finance literature is that financial time series data such as stock market returns are often non-stationary (De Medeiros and Matsumoto, 2006). For most of them, they follow a time varying variance pattern, suggesting that periods of relative tranquility are followed by those of high volatility. This, according to Pagan and William (1989), provides the basis of classifying volatility into predictable and unpredictable components with research interest concentrated on the predictable aspect: the conditional variance. According to Long (2008) and Olowe (2009), the concern about studying volatility in stock markets stems from the fact that volatility has implications for the risk premium associated with investment in financial assets.

There exists a reasonable number of studies that sought to model volatility in the NSE, but only a few of such studies have paid attention to forecasting and conditional error distribution. Aliyu (2012) analyzed the reaction of the Nigerian stock market to monetary policy shocks during the Global Financial Crisis using monthly All Share Index (ASI) data from January 2007 to August 2011. The study among other things employed the symmetric GARCH(1,1) and asymmetric EGARCH(1,1) models to investigate the presence of volatility innovations in the monthly return series over the

period of the study. The study found evidence of significant ARCH innovations and volatility persistence for both the symmetric and asymmetric GARCH models. Furthermore, results for the asymmetric EGARCH model also exhibited significant positive leverage effect. The study concluded that there is evidence of volatility persistence and leverage effects in the Nigerian stock market. However, all the GARCH models were estimated under the assumption of normally distributed conditional errors, which may not necessarily be true of the Nigerian stock market.

Similarly, Atoi (2014) utilized daily values of the ASI from 2nd January 2008 to 11th February 2013 to model and forecast stock market volatility in Nigeria under the assumption that conditional errors follow a normal, student's t and generalized distribution using GARCH, EGARCH, TGARCH and PGARCH models. Results for volatility modeling showed presence of ARCH effects and volatility persistence, while negative and significant leverage effects were observed for the NSE return. Forecast results using PGARCH(1,1) model suggested the student's t-distribution is the best. However, analysis was based on the ASI and not its disaggregated components.

Furthermore, Babatunde (2013) employed monthly ASI data from 1980 to 2010 to model volatility in the Nigerian stock market using EGARCH models. Results of the study showed that volatility shocks are quite persistent for the NSE, and this can distort economic growth. However, the study solely relied on the normal distribution assumption.

In another study, Emenike (2010) employed monthly ASI of the Nigerian Stock Exchange (NSE) to model volatility and the behaviour of stock returns from January 1999 to December 2008. Using GARCH and GJR-GARCH models, the study examined the level of volatility persistence, volatility clustering and leverage effects in the NSE return series. The results revealed evidence of volatility clustering and leverage effects, suggesting volatility persistence for the NSE return series. However, the study assumed normal distribution for the conditional errors.

In a related study, Emenike and Friday (2012) employed daily closing prices of the NSE ASI from 2nd January 1996 to 30th December 2011 to examine the asymmetric properties of volatility in the NSE using EGARCH and GJR-GARCH models. The study found positive and significant asymmetric effects from the EGARCH model, but the GJR-GARCH model reported negative and significant volatility. It was thus concluded that positive news produces more volatility than negative news of the same magnitude in the NSE. However, the study was premised on the assumption of normally distributed conditional errors.

Similarly, Emenike and Ani (2014) employed daily closing prices of the Nigerian Banking sector stocks from 3rd January 2006 to 31st December

2012 to examine the nature of volatility in the Nigerian Banking sector using symmetric GARCH models. Results revealed evidence of ARCH effects, volatility clustering and persistence in the Banking sector return. However, the model was premised on the assumption that conditional errors follow normal distribution pattern.

Furthermore, Hamadu and Ibiwoye (2010) utilized daily closing prices for a sample of Insurance stocks listed on the NSE from 15th December 2000 to 9th September 2008 to model and forecast volatility using ARCH, GARCH, EGARCH and TAGRCH models. Results showed evidence of ARCH effects, and EGARCH model outperformed the others in terms of modeling and forecasting volatility for the Insurance sector in Nigeria. The study also assumed that conditional errors follow normal distribution.

In the same vein, Olowe (2009) employed daily return of the NSE to investigate the relationship between stock return and volatility over the period 4th January 2004 to 9th January 2009 using EGARCH-in-mean model. The study reported significant volatility persistence and leverage effects for the NSE return series. However, the study assumed that conditional errors follow normal distribution.

The study by Onwukwe, Samson and Lipcsey (2014) utilized daily closing prices of fifteen Nigerian banks from 4th January 2005 to 31st August 2012 to model and forecast volatility using ARCH, GARCH, EGARCH and TGARCH models. Results showed the presence of ARCH effects in the return series. In terms of forecast, EGARCH(1,1) model predicted volatility better. The study concludes that asymmetric models are more suitable than their symmetric counterparts in modeling and forecasting volatility. However, there is no evidence that the study took into cognizance the effect of conditional error distribution.

In the same vein, Osazevbaru and Sakpaide (2013) employed monthly and daily closing values of the ASI from 2nd January 1995 to 31st December 2009 to test for leverage effects in the NSE using EGARCH models. The study revealed strong evidence of volatility persistence but no significant leverage effect was established for the NSE. It was concluded that positive shocks do not generate less volatility effect than negative shocks. The study also relaxed the conditional error distribution assumption.

Lastly, Osazevbaru (2014) employed daily share prices from 1995 to 2009 to model volatility in the Nigerian stock market using ARCH and GARCH models. Results from the study revealed that the Nigerian stock market exhibits significant volatility clustering and the rate of decay for the response function is 1.1783. However, the study did not factor in the implication of conditional error distribution.

3. THEORETICAL FRAMEWORK

This study adopted the efficient market theory as the bedrock upon which the analysis rests. The efficient market theory developed by Fama (1965, 1970) holds that in an efficient market, stock prices adjust instantaneously to reflect new information such that it becomes difficult for an individual to trade on such information and earn abnormal return.

Fama (1970) identified three forms of efficiency associated with stock markets. According to him, a stock market is said to be weak-form efficient if information on past stock prices is fully reflected in current prices. This suggests that stock prices are a random walk and predicting their pattern is not a tea party.

The notion of security prices following a random walk predates the classical work of Fama. Bachelier (1900) was the first to assert that successive price changes are independent and identically distributed (i.i.d) because of the randomness with which information arrives the stock market and possible unsystematic patterns in noise trading. Bachelier's work was supported by Osborne (1959) and Samuelson (1965) who established that stock prices are random, and thus the mathematical expectation of their speculation is zero. However, the seminal works of Fama (1965, 1970) concretized the notion of Random Walk Hypothesis (RWH).

The earliest version of the RWH was premised on the assumption that investors are rational and thus arrive at a "rational expectation forecast." This in turn leads to a random walk in security prices so that the more random is the sequence of price changes, the more efficient is the market said to be. Despite its contestability, an avalanche of studies support the RWH such as Osborne (1959), Working (1960), Fama (1965, 1970), Poterba and Summers (1988) and Fama and French (1988).

Later scholars such as Lo and MacKinlay (1999) criticized the rationality assumption. In response, Shleifer (2000) modified the underlying assumptions of the RWH to include:

(i) Investors are rational and hence value securities rationally

(ii) Some investors are irrational but their trades are random and cancel each other out

(iii) Some investors are irrational but rational arbitrageurs eliminate their influence on prices

The nexus between stock prices as a random walk and volatility stems from the fact that random behaviour implies increased instability in the standard deviation (or variance) of price series. Volatility is thus a feature associated with efficient markets because it creates the desired randomness in security prices (Brooks, 2008; Chiang & Doong, 2001; Poon, 2005). However, volatility generates "noise" when it becomes excessive and thus increases the risk associated with trading in such a market as investors will expect higher

risk premium as a compensation for increased risk (in the form of increased volatility) (Chaing & Doong, 2001; Olowe, 2009).

4. METHODOLOGY

This study utilized daily closing values of the Banking Index, Consumer Goods Index, Insurance Index and NSE30 Index, which are sub-categories of the NSE ASI from 16th December 2009 to 3rd February 2014. The data was retrieved from the electronic database of *Thomson Datastream* to model and forecast volatility for the different categories of the NSE return using PARCH model. The daily return series for the four sub-categories of the NSE ASI from the 16th December 2009 to 15th December 2013 was used for modeling volatility while the period 16th December 2013 to 3rd February 2014 was utilized for the forecast. The choice of scope for the study was purely determined by the availability of data. The series of daily closing values of the Banking Index, Consumer Goods Index, Insurance Index and NSE30 Index were converted to daily continuously compounded market return using the following formula:

$$R_{m,t} = \ln\left[\frac{ASI_t}{ASI_{t-1}}\right] \quad \text{..... (1)}$$

where:
R_{mt} is the return on a given sub-category of the NSE ASI at time t;
ASI_t is a given sub-category of the NSE ASI at time t;
ASI_{t-1} is a given sub-category of the NSE ASI at time t-1; and
ln stands for natural logarithm.

The logarithmic transformation of the time series data became necessary in view of the need to keep the effect of outliers under control. Being time series in nature, the daily return series were subjected to stationarity test. Financial time series data, especially those collected on daily basis are generally believed to be non-stationary (Agung, 2009; Brooks, 2008). This non-stationarity implies the existence of unit root in the data which often gives rise to the occurrence of spurious results (De Medeiros & Matsumoto, 2006). To avoid spurious inferences, the study employed the Augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1979), the Pillips-Perron (PP) test (Phillips & Perron, 1988) and the KPSS test (Kwiatkowski, Phillips, Schmidt & Shin, 1992) to test for the stationarity of the return series with a view to checking for the presence of unit root in the series.

The study employed the PGARCH(1,1) model to investigate whether the Banking Index, Consumer Goods Index, Insurance Index and NSE30 Index exhibit the stylized facts. The PGARCH(1,1) model is a variant of the asymmetric PARCH model, which was generalized by Ding *et al.* (1993). The PARCH models the standard deviation by expressing the standard deviation raised to the power of a positive exponent (δ) as a function of lagged conditional standard deviations and the lagged absolute innovations raised to the power of the same exponent. In addition , the PARCH model also has the ability to capture leverage effects as is the case with other asymmetric GARCH models. With the model, the choice is either to select and impose a power exponent of one's choice, or allow the model to select an optimal power exponent that maximizes the contribution to the log-likelihood. This flexibility accounts for the validity and acceptance of the model in the volatility literature. Thus, the PGARCH(1,1) model was adopted for the study because it is considered adequate to model and forecast stock market volatility. According to Ding *et al.* (1993), the mean equation for the PGARCH(1,1) model can be expressed as:

$$r_t = c + r_{t-1} + \varepsilon_t \quad \text{..... (2)}$$

Where:

r_t = Return for a given sub-category of NSE ASI at time t

c = Constant of the mean regression

r_{t-1} = Lag of return for a given sub-category of NSE ASI at time t

ε_t = Error term from the mean regression at time t

On the other hand, the variance equation for the PGARCH(1,1) model is given as:

$$\sigma_t^{\delta} = \omega + \beta\sigma_{t-1}^{\delta} + \alpha\left(|\varepsilon_{t-1}| - \gamma\varepsilon_{t-1}\right)^{\delta} \quad \text{.....(3)}$$

where:

ω = Intercept of the variance equation

α = Coefficient of the ARCH term

β = Coefficient of the GARCH term

γ = Coefficient of asymmetry

δ = Power exponent (parameter)

$\varepsilon_{t-1}^{\delta}$ = lagged values of the error term from the mean equation

$\alpha\left(|\varepsilon_{t-1}| - \gamma\varepsilon_{t-1}\right)^{\delta}$ = lag of the squared residuals from the mean equation or the ARCH term (used to measure news about volatility from the previous period).
$\beta\sigma_{t-1}^{\delta}$ = the last period forecast variance (the GARCH term).

Note: $|\gamma| \leq 1$; asymmetric effect is present when $\gamma \neq 0$; $\delta > 0$

Following Bollerslev (1986), Brooks (2008) and Guidi and Gupta (2012) who argued that financial asset return hardly follow a normal distribution pattern and thus tend to exhibit excess kurtosis and fat tails, the study investigated the implication of the assumption of the conditional distribution of errors. Hence the PGARCH(1,1) model was employed to model and forecast volatility of the Banking Index, Consumer Goods Index, Insurance Index and the NSE30 Index under three distributional assumptions of the conditional errors: normal distribution, student's t-distribution and GED.

For the student's t-distribution, the tail parameter v accounts for behaviour of the tail distribution. If $v > 2$, the distribution is fat-tailed, and tends towards normal distribution as v increases to infinity. For the Generalized Error Distribution, the tail parameter $r > 0$, and it is a normal distribution if $r = 2$. However, the distribution is fat-tailed if the tail parameter $r < 2$.

To establish which of the models under the three distributional assumptions fits better, two model selection criteria were utilized: the Akaike Information Criteria (AIC) and the Schwarz (Bayesian) Information Criteria (BIC). The AIC is used for selection among alternative models, with the model with smaller values being most preferred. The AIC is computed as follows (Brooks, 2008):

$$AIC = -2l/T + 2k/T \quad \ldots\ldots (4)$$

The BIC is often used as an alternative to the AIC, but imposes a larger penalty for additional coefficients. It can be expressed as follows:

$$BIC = -2l/T + (k\log T)/T \quad \ldots\ldots (5)$$

where:
l is the log likelihood;
T is the number of observations.
k is the number of right-hand side regressors.
The Ljung-Box Q-statistics was employed to test for the presence of auto-correlation in the residuals up to 36 lags. The Q-statistics at lag k is a test statistic for the null hypothesis that there is no serial correlation up to order k.

The study tested for the presence of serial correlation up to order 36, and the Q-statistics is computed as follows:

$$Q_{LB} = T(T+2)\sum_{j=1}^{k}\frac{\tau_j^2}{T-J} \quad \ldots\ldots (6)$$

Where:

τ_j = The j-th autocorrelation

T= The number of observations

Since the PGARCH(1,1) model was estimated under the Maximum Likelihood technique, then Q is asymptotically distributed as a χ^2 under the null hypothesis with degrees of freedom equal to the number of autocorrelations (Gujarati, 2003).

To be sure that the estimated PGARCH(1,1) model is appropriate for the data and adequately captures the ARCH effects in the Banking Index return, Consumer Goods Index return, Insurance Index return and NSE30 Index return, the Engle (1982) ARCH-LM test was employed to test for the presence of any ARCH effect in the residuals. According to Engle (1982), the ARCH-LM model is estimated based on the following equation:

$$e^2{}_t = \beta_0 + \left(\sum_{s=1}^{q}\beta e^2{}_{t-s}\right) + \upsilon_t \quad \ldots\ldots (7)$$

where:

$e^2{}_t$ is the square of the residual at time t;

β_0 is a constant;

$\beta e^2{}_{t-s}$ is the coefficient of the lag of squared residual at time t-s; and

υ_t is the error term at time t.

The PARCH model was used to forecast volatility because of its reported outstanding performance relative to other GARCH family models in the forecast contest (Guidi & Gupta, 2012). Accordingly, the out-of-sample forecast of volatility for the Banking Index, Consumer Goods Index, Insurance Index and NSE30 Index was based on the three distributional assumptions of the conditional errors. In line with the existing practice of evaluating forecast results, the best forecast was selected based on the forecast error statistics of Root Mean Squared Error (RMSE), Mean Absolute Error (MAE) and Theil Inequality Coefficient (TIC).

The RMSE and the MAE depend on the scale of the dependent variable and are used as relative measures to compare forecast results for the same series across different models. The smaller the values of RMSE and

MAE, the better the forecasting ability of the model. The TIC on the other hand is scale invariant and always lies between 1 and 0, where zero indicates a perfect fit (Brooks, 2008).

Suppose the forecast sample is $j = T + 1, T + 2, ..., T + h$, and y_t and $\hat{y}_t$ denote the actual and forecasted value of y at time t respectively, the forecast error statistics are computed as follows:

$$RMSE = \sqrt{\sum_{t=T+1}^{T+h} \left(\hat{y}_t - y_t \right)^2 / h} \quad \text{.....(8)}$$

$$MAE = \sum_{t=T+1}^{T+h} \left| \hat{y}_t - y_t \right| / h \quad \text{..... (9)}$$

$$TIC = \frac{\sqrt{\sum_{t=T+1}^{T+h} \left(\hat{y}_t - y_t \right)^2 / h}}{\sqrt{\sum_{t=T+1}^{T+h} \hat{y}^2 / h} + \sqrt{\sum_{t=T+1}^{T+h} y_t^2 / h}} \quad \text{..... (10)}$$

5. RESULTS AND DISCUSSIONS

In line with the methodology of the study, the study conducted the ADF, PP and KPSS tests to ascertain the stationarity of the Banking Index return, the Consumer Goods Index return, the Insurance Index return and the NSE30 Index return series. Table 1 presents summary of the results for the tests.

Table 1 Unit Root Tests for Stationarity of Return Series

Series	*ADF Statistics*	*Phillips-Perron Statistics*	*KPSS Statistics*	*Order of Integration*	*Stationary*
NIGBANK Return	-29.1825*	-29.1386*	0.0662	I(0)	Yes
NIGCONSU Return	-32.4662*	-32.4655*	0.0799	I(0)	Yes
NIGINSU Return	-31.6271*	-31.6282*	0.3175	I(0)	Yes
NIGSE30 Return	-29.7716*	-29.9905*	0.2144	I(0)	Yes

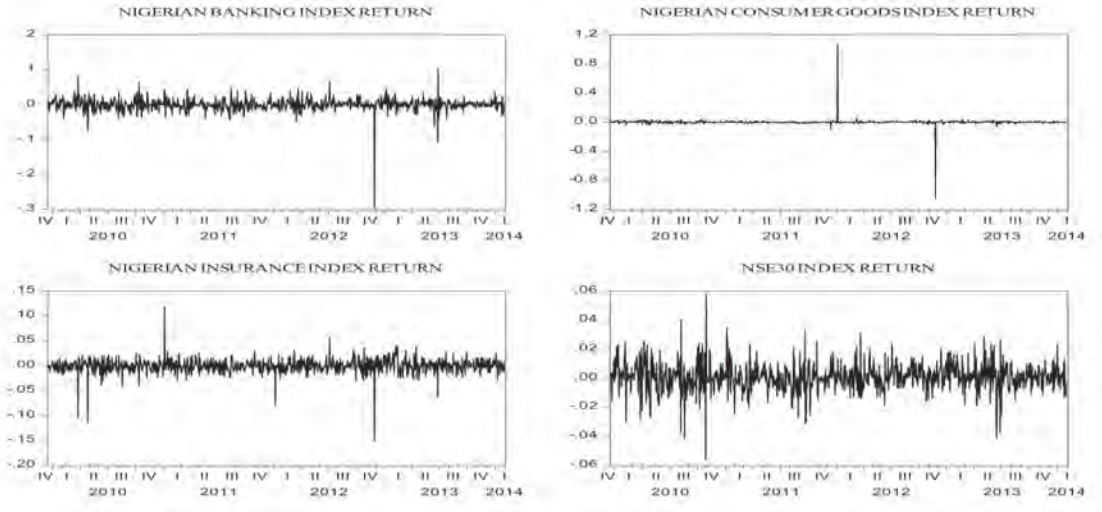
Source: *Eviews 8* output, 2015
* imply significance at the 10%, 5% and 1% levels respectively.
NB: All ADF regressions contain an intercept and 36 lags

It can be seen from Table 1 that results for the ADF and PP tests on the levels of the Banking Index return have shown highly significant coefficients, implying the strong rejection of the null hypothesis of the presence of unit root in the series. On the other hand, the KPSS test for the Banking Index return reveals the failure to reject the null hypothesis that the series is stationary. The evidence of stationarity and absence of unit root in the levels of Banking Index return implies that the series can be used to estimate relationships in its original form since it is integrated of the order I(0).

A closer look at the table will reveal that the results of absence of unit root in the series at levels applies to the remaining three return series of Consumer Goods Index return, Insurance Index return and the NSE30 Index return, suggesting that all the series are stationary and integrated of the order I(0). This finding is consistent with the extant studies that asset prices are seen to be non-stationary, while asset returns are assumed as stationary (Brooks, 2008; De Medeiros & Matsumoto, 2006).

To further appreciate volatility in the return of the four sub-categories of the NSE ASI, the graph of all of the series is presented. This is necessary to loosely examine instability in the variance of the series overtime. Figure 1 presents a plot of all the four sub-categories of the NSE Index return:

Figure 1: NSE Index Return Volatility



Source: Eviews 8 output, 2015

It can be seen from figure 1 that the series of Banking Index return is not stable over the period 2009 to 2014, and instead tends to exhibit some kind of volatility. The table also shows that except for a few spikes, the magnitude of volatility is almost uniform. However, there is mild indication of volatility clustering around mid-2010 and towards the end of 2013. Figure 2 presents the plot of Consumer Goods Index return for the same period.

Figure 1 further revealed that the instability in the return of Consumer Goods Index is not quite pronounced as the spikes are closely mean-reverting. This suggests that volatility for this series may not be quite pronounced. However, there are two noticeable spikes, one in December 2011 and the other in December 2012. The effect of these spikes is so obvious even after logging the series prior to computing continuously compounded return. Figure 3 presents a plot of the Insurance Index return.

Furthermore, the figure also shows that the behaviour of Insurance Index return is somewhat similar to that of the Banking Index return presented in figure 1 in that there is marked evidence of instability in the return series over time. However, there are more spikes of return over the period than there were in figure 1. There are pronounced spikes of return in March 2010, January 2011, January 2012 and November 2012. Similarly, there remarkable signs of volatility clustering in mid-2010, end-2012 and end-2013.

For the NSE30 Index, the figure depicted high instability in the return series over the period 2009 to 2014. The evidence of volatility for this series is more pronounced than the those observed in the remaining three other return series under study. Aside the fact that there is marked variability in return, signs of volatility clustering are more obvious for the series. A close look at the figure reveals that there is high volatility between December 2009 and June 2010 because the spikes in return are very high. Furthermore, volatility clustering can be observed in March and October 2010, March 2012 and May 2013. On the whole, examination of the graphical plot suggests that there is evidence of volatility in all the return series examined, with pockets of clustering in some of the series. To further understand the nature and behaviour of the four return series under consideration, Table 2 provides descriptive statistics for the series.

It can be seen from table 2 that the mean or average value for Banking Index return series is positive and slightly above zero, and the standard deviation, which measures the dispersion around the mean, is approximately 0.018. Furthermore, the reasonable gap between the minimum return of -0.295 and the maximum of approximately 0.104 suggests the gap of variability in the return series. In the same vein, the negative skewness value implies that there are more negative than there are positive returns in the series, and thus the distribution of the series has a longer left tail. Similarly, the large kurtosis value means that the distribution of the return series exhibits excess

peakedness at the mean, and is therefore leptokurtic in nature. AS would be expected the corresponding high Jarque-Bera value, which is strongly significant, is a proof that the Banking Index return does not follow normal distribution.

For the Consumer Goods Index return, table 2 shows that the average return is also positive and slightly greater than zero, and the standard deviation is approximately 0.048. Similarly, the minimum value is approximately -1.061 while the maximum is 1.084, implying the extent of variability in the return series over time. Furthermore, the table shows that the series is positively skewed, and the large kurtosis value is a proof that the series exhibits extreme peakedness and is thus leptokurtic. Expectedly the large and highly significant value of the Jarque-Bera statistic suggests that the series is anything but normally distributed.

Table 2 Descriptive Statistics of Nigerian Stock Market Return

Descriptives	*NIGBANK Return*	*NIGCONSU Return*	*NIGINSU Return*	*NSE30 Return*
Mean	0.0003	0.0007	-0.0005	0.0008
Standard Dev.	0.0179	0.0475	0.0141	0.0095
Minimum	-0.2952	-1.0613	-0.1511	-0.0558
Maximum	0.1037	1.0843	0.119	0.0582
Skewness	-4.0651	0.6399	-1.5466	-0.0902
Kurtosis	73.6329	483.7717	26.9158	6.9973
Jarque-Bera	227058.3*	10382178*	26120.56*	719.176*
Observations	1078	1078	1078	1078

Source: *E-Views 8 Output*, 2015

* implies significance at the 10%, 5% and 1% levels respectively.

On the other hand, the Insurance Index return showed an average negative return of approximately zero, with a standard deviation of approximately 0.014. In the same vein, the minimum and maximum return values of -0.151 and 0.119 respectively indicate that there is relative variability in the return series as well. However, the table shows a negative skewness for the series, implying that the distribution has a longer left tail. Furthermore, the table shows a kurtosis value that is by far above the threshold of three, implying leptokurtosis in distribution of the return series. As was the case with the previous series, the large and highly significant value of the Jarque-Bera statistic affirms the non-normal distribution of the Insurance Index return.

For the NSE30 Index return, the mean return is positive and also slightly above zero while the standard deviation is approximately 0.010. The minimum value of -0.056 and maximum value of 0.058 suggest the degree of variability in the series. The table reveals a negative skewness for the distribution, implying that negative returns dominate the series and thus have a longer left tail. Similarly, the kurtosis of the series is above the threshold and therefore means that the distribution of returns is peaked at the mean. This is further confirmed by the large and highly significant Jarque-Bera value.

In a nutshell, results from the descriptive statistics of the series are consistent with existing finance theories that the return on financial assets do not follow normal distribution pattern. According to Brooks (2008) and Poon (2005), leptokurtosis is a common feature of financial asset returns and thus tends to make their distribution to be non-normal.

Following from the methodology of this study, the PGARCH(1,1) was employed to model the volatility inherent in the return series of the Banking Index, Consumer Goods Index, Insurance Index and the NSE30 Index. Table 3 presents results of volatility modeling for the Banking Index return series. The table comprises of results for the models estimated under the assumptions of normal distribution, student's t-distribution and generalized distribution of the conditional errors.

Table 3 Volatility Modeling Results for the Banking Index Return

	Normal Distribution	***Student's t-Distribution***	***Generalized Error Distribution***
ω	0.000**	0.003	0.004
α	-0.011**	0.251*	0.268*
β	0.921	0.124	0.207
γ	0.998*	0.694*	0.639*
δ	1.327*	0.937*	0.946*
φ	-	3.509*	0.903*
C-Q(36)	43.149	42.547	47.318
LM(36)	18.223	0.892	1.284
AIC	-5.267	-5.751	-5.722
BIC	-5.234	-5.713	-5.683
RANK	3	**1**	2

Source: *E-Views 8 Output,* 2015

*,**and* imply significance at the 10%, 5% and 1% levels respectively.

It can be seen from table 3 that results for the asymmetric PGARCH(1,1) model under the normal distribution assumption show that the intercept (ω) of the variance equation, which is a measure of the longterm average is statistically significant at the 5% level. Similarly, the coefficient of information about volatility in the previous period or the ARCH term (α) is statistically significant at 5% level, suggesting strong presence of ARCH effects in the Banking Index return series. This finding implies that news about volatility from the previous period has strong explanatory power on volatility in the current period. However, coefficient of the last period's forecast variance or the GARCH term (β) is not significant, implying that the evidence of volatility clustering in the return series is not significant. Furthermore, the coefficient of asymmetry or leverage effect (γ) is positive and highly significant, suggesting that positive shocks have larger effect on the conditional variance than negative shocks of the same magnitude. The table also reveals that the power exponent or power parameter (δ) is strongly significant, suggesting its appropriateness for the model. The Correlogram-Q-Statistics (C-Q) and the Engle (1982) ARCH-LM diagnostic tests conducted on the residuals of the model showed the absence significant serial correlation and ARCH innovations up to 36 lags, suggesting that the mean and variance equations were able to adequately capture serial correlation and ARCH innovations (volatility) in the series.

On the other hand, results for the PGARCH(1,1) model for the Banking Index return under the student's t-distribution assumption showed a positive and insignificant intercept, but highly significant ARCH effects. However, the GARCH term is positive and insignificant. The table also shows positive and highly significant effects for the leverage and power terms. Similarly, the distribution parameter (φ) for the t-distribution degrees of freedom reveals a positive and strongly significant coefficient that is greater than one, suggesting that the distribution of errors follows more of the t-distribution than normal distribution. An examination of the C-Q and ARCH-LM results confirms the absence of significant serial correlation and ARCH effects in the model.
The table also presented results for the PGARCH(1,1) model estimated under the GED assumption. Results for the model show that the intercept is also positive and insignificant, while coefficient of the ARCH term is positive and highly significant. However, the GARCH term showed insignificant effect. The coefficients of asymmetry, power and distribution parameter were all positive and strongly significant. Similarly, residual diagnostics provided evidence on the absence of significant auto-correlation and ARCH effects.

A close look at the values of the two model selection criteria of AIC and BIC reveals that the PGARCH(1,1) model for the Banking Index return estimated under the assumption that conditional errors follow a student's t-

distribution has the lowest values, suggesting that the model is better than the other two. This implies that the Banking Index return follow a student's t-distribution.

Furthermore, the study modeled volatility in the Consumer Goods Index return using the PGARCH(1,1) under the three distributional assumption of conditional errors. The results are presented in table 4.
From Table 4, it can be seen that results of PGARCH(1,1) for the Consumer Goods Index return under the normal distribution assumption show that the intercept is positive and not significant, while coefficient of the ARCH term is negative and strongly significant. However, the GARCH and asymmetry term, even though positive, are not significant. On the other hand, the power and distribution terms were found to be greater than one and highly significant. Residual test results also show absence of significant auto-correlation and ARCH effects.

Table 4 Volatility Modeling Results for the Consumer Goods Index Return

	Normal Distribution	***Student's t-Distribution***	***Generalized Error Distribution***
ω	0.002	0.000	0.002
α	-0.005*	0.384*	-0.004
β	0.009	0.064	-0.009
γ	0.589	-0.026	0.549
δ	1.938*	1.691*	1.948**
φ	-	3.051*	1.821*
C-Q(36)	4.752	3.718	5.575
LM(36)	0.163	0.158	0.160
AIC	-3.029	-6.339	-3.354
BIC	-2.996	-6.301	-3.316
RANK	3	**1**	2

Source: *E-Views 8 Output*, 2015
* implie significance at the 10%, 5% and 1% levels respectively.

For PGARCH(1,1) results under the student's t-distribution, the intercept was found to be positive and not significant, even though coefficient of the ARCH term is positive and significant. Similarly, the leverage effect parameter is negative and not significant. However, the power and distributional parameters were found to be positive and highly significant. As would be expected, results for the C-Q and ARCH-LM tests showed absence

of significant serial correlation and ARCH innovations in the residuals of the model.

It can also be seen from table 4 that results for the PGARCH(1,1) model with GED show a positive intercept and a negative ARCH term coefficient, both of which are not significant. Similarly, the GARCH term was found to be negative and not significant, but the coefficient of asymmetry was positive, even though not significant as well. However, the power and tail distribution parameters were positive and highly significant. Results for the diagnostic test did not also show any reason to suspect serial correlation and presence of ARCH effects.

In terms of model performance, the table shows that PGARCH(1,1) model with student's t-distribution outperformed the other two models and is thus ranked as the best among them. This implies that the Consumer Goods Index return fits better with student's t-distribution.

The study further examined volatility for the Insurance Index return using PGARCH (1,1) model under the three error distributions. Results of the three models are presented in table 5

Table 5 Volatility Modeling Results for the Insurance Index Return

	Normal Distribution	***Student's t-Distribution***	***Generalized Error Distribution***
ω	0.004	0.001	0.000
α	0.017*	0.036**	0.022
β	-0.978*	-0.416	-0.160
γ	0.956*	0.940*	0.953*
δ	0.492*	0.840*	1.479**
φ	-	4.404*	0.960*
C-Q(36)	39.505	38.994	37.968
LM(36)	14.949	22.974	24.932
AIC	-5.693	-6.009	-5.967
BIC	-5.660	-5.971	-5.929
RANK	3	**1**	2

Source: *E-Views 8 Output*, 2015
* implies significance at the 10%, 5% and 1% levels respectively.

It can be seen from table 5 that intercept for the PGARCH(1,1) model for Insurance Index return estimated under normal distribution is positive and not significant. However, coefficients of ARCH term, asymmetry term and power term were positive and highly significant, while the GARCH term was negative and also highly significant. Residuals tests show absence of auto-correlation and ARCH innovations.

For the PGARCH(1,1) model estimated under student's t-distribution, the intercept is positive and not significant, while the ARCH term is positive and significant. But the GARCH term was found to be negative and not significant. However, the asymmetric, power and distributional terms were positive and highly significant. Similarly, residual test results confirm the absence of significant serial correlation and ARCH effects.

Results for the PGARCH(1,1) model with GED for the Insurance Index return reveal positive and statistically not significant intercept and ARCH coefficients, while the GARCH term was negative and also not significant. However, the coefficients of asymmetry, power and tail distribution were all positive and significant. Also, residual diagnostics did not show any evidence of significant auto-correlation and ARCH effects.

In terms of model performance, the table shows that PGARCH(1,1) model with student's t-distribution performed better and thus best explains the volatility inherent in the return series. This means that volatility in the Insurance Index return is best modeled under the student's t-distribution assumption.

The last series modeled for volatility by this study is the NSE30 Index return. As was the case for the preceding return series, the PGARCH (1,1) model was employed to model volatility using the three error distributions. Results of the three models are presented in table 6

Table 6 Volatility Modeling Results for the NSE30 Index Return

	Normal Distribution	***Student's t-Distribution***	***Generalized Error Distribution***
ω	0.000	0.000	0.000
α	0.147*	0.263**	0.210*
β	-0.041	0.045	0.032
γ	0.736*	0.612*	0.671*
δ	2.484*	1.790*	1.906*
φ	-	4.130*	1.125*
C-Q(36)	48.568	48.538	48.762
LM(36)	49.243	58.576*	53.149
AIC	-6.612	-6.694	-6.700
BIC	-6.578	-6.656	-6.662
RANK	3	2	**1**

Source: *E-Views 8 Output*, 2015

* implies significance at the 10%, 5% and 1% levels respectively.

It can be seen from table 6 that PGARCH(1,1) model for the NSE30 Index return estimated under the normal distribution assumption shows a positive

and not significant intercept, while the ARCH coefficient was positive and highly significant. However, the GARCH term is negative and not significant. On the other hand, coefficient of leverage effects and the power parameter were positive and highly significant. Test for the presence of serial correlation and ARCH effects also rejected the null hypothesis that they exist in the residuals of the model.

Furthermore, results for the model estimated under the student's t-distribution assumption show positive and not significant intercept, but positive and significant coefficient of ARCH effects. In the same vein, the GARCH term was positive, but not significant. Similarly, the coefficients of asymmetry, power and distribution parameter were all positive and highly significant. Results for the C-Q test showed no significant evidence of serial correlation. However, the null hypothesis of no significant ARCH effects up to 36 lags was rejected for the Insurance Index return residuals.

Lastly, results of the model under the GED show a positive and not significant intercept, but a positive and significant ARCH coefficient. However, the GARCH coefficient, which is also positive is not significant. On the other hand, the asymmetric, power and tail distribution parameters are positive and significant. In the same vein, residual test results reveal absence of auto-correlation and ARCH effects in the residuals of the return series.

For the model selection, PGARCH(1,1) under the GED outperformed the other two models and is thus adopted as the best error distribution for modeling volatility in the return series. This suggests that the conditional errors of the NSE30 Index return follow a GED pattern.

After modeling volatility in the four series of returns, the study conducted out-of-sample forecast of volatility for the Banking Index return, Consumer Index return, Insurance Index return and the NSE30 Index return under the three distributional assumptions of the conditional errors with a view to establishing the error distribution that best forecasts volatility. Table 7 presents forecast results for the Banking Index return under the three distributional assumptions

From Table 7, it can be seen that the three forecast error statistics of RMSE, MAE and TIC have been reported for each of the forecasts made under the normal, student's t and GED assumptions. A careful look at the table shows that the forecast results under the normal distribution assumption has the lowest RMSE and MAE. With two lowest out of the three forecast statistics, forecast of volatility for the Banking Index return performed better under the normal distribution assumption. Results for the volatility forecast of the Consumer Index return are presented in table 8.

Table 7 Volatility Forecast Results for the Banking Index Return

Error Statistics	***Normal Distribution***	***Student's t-Distribution***	***Generalized Error Distribution***
RMSE	0.014659	0.014690	0.014692
MAE	0.011184	0.011272	0.011256
TIC	0.880258	0.845155	0.864246
RANK	**1**	2	3

Source: *E-Views 8 Output,* 2015

Table 8 Volatility Forecast Results for the Consumer Goods Index Return

Error Statistics	*Normal Distribution*	*Student's t-Distribution*	*Generalized Error Distribution*
RMSE	0.007225	0.007137	0.007052
MAE	0.005538	0.005351	0.005303
TIC	0.850931	0.867445	0.905837
RANK	3	2	**1**

Source: *E-Views 8 Output,* 2015

It can be seen from the table that volatility forecast for the Consumer Goods Index return performed better under the GED assumption. The evidence of this can be seen in the lowest value of the RMSE and the MAE under the GED. Table 9 presents results for the forecast of Insurance Index return volatility

Table 9 Volatility Forecast Results for the Insurance Index Return

Error Statistics	*Normal Distribution*	*Student's t-Distribution*	*Generalized Error Distribution*
RMSE	0.010248	0.010228	0.010225
MAE	0.007518	0.007486	0.007493
TIC	0.938266	0.955186	0.980341
RANK	3	**1**	2

Source: *E-Views 8 Output,* 2015

It can be seen from the table 9 that forecast under the GED has the lowest RMSE while student's t-distribution forecast has the lowest MAE. However, the lowest TIC value falls under the student's t-distribution forecast, giving it an edge in two out of the three forecast error statistics. This therefore means that the student's t-distribution forecast outperformed the other two. Lastly, forecast results for the NSE30 Index return are presented in table 10.

Table 10 Volatility Forecast Results for the NSE30 Index Return

Error Statistics	*Normal Distribution*	*Student's t-Distribution*	*Generalized Error Distribution*
RMSE	0.008751	0.008789	0.008819
MAE	0.007091	0.007088	0.007047
TIC	0.860352	0.863145	0.871996
RANK	**1**	2	3

Source: *E-Views 8 Output,* 2015

It can be seen from table 10 that the duo of RMSE and TIC out of the three forecast error statistics have their lowest values under volatility forecast with normal conditional error distribution. With two out of the three forecast error statistics in its favour, the normal distribution forecast has outperformed the other two distributions.

In a nutshell, results for modeling volatility in the Banking Index return have shown significant ARCH innovations, insignificant volatility clustering and positive and significant leverage effects. Furthermore, the significant power parameter shows the appropriateness of the model, while the significant distribution parameter shows that the conditional errors follow a t-distribution and is thus the most suitable for the data. For the Consumer Goods Index return, results also showed significant ARCH innovations, insignificant GARCH effects, positive and significant leverage effects, significant power parameter and distribution parameter, suggesting that the model best fits the data under the student's t-distribution assumption. Similarly, the Insurance Index return showed evidence of significant ARCH effects, insignificant volatility clustering, positive and significant leverage effects, significant power and distribution parameter, implying the model suitability and fitness of student's t-distribution . In the same vein, results for the NSE30 Index return exhibited significant ARCH innovations, insignificant volatility clustering, positive and significant leverage effects, positive and significant power and distribution tail parameters, suggesting the suitability of the model and the best fit of the GED for the return series. The findings of significant ARCH and positive asymmetric effects by this study are consistent with the those of Aliyu (2012), Atoi (2014), Babatunde (2013), Emenike (2010), Emenike and Friday (2012), Onwulwe *et al.* (2014), and Osazevbaru (2014). However, the evidence of insignificant volatility clustering negates the findings of all these studies.

For the forecast results, it was found that volatility for the Banking Index and NSE30 Index is better forecasted using normal distribution assumptions for the conditional errors. Furthermore, the results also showed that Consumer Index return can best be forecasted using GED, while the Insurance Index return gives its best forecast results under the student's t-distribution assumption.

6. CONCLUSION

This study attempted to model and forecast volatility in the Banking Index, Consumer Goods Index, the Insurance Index and the NSE30 Index under the assumption that conditional errors follow normal, student's t and generalized error distributions. The evidence of ARCH effect is consistent

with the fact that the four index returns exhibit significant volatility. However, the statistical insignificance of GARCH coefficient means that volatility for the four index return series does not occur in bunches but is instead mildly spread overtime. This makes it difficult for investors and other market participants to discern suitable pattern for predicting the behaviour of volatility and thus form trading rules with which to beat the stock market. As an implication, the absence of pronounced volatility clustering may be attributable to the relatively low trading activities on the NSE since the spillover of the Global Financial Crisis into the NSE in 2008.

Furthermore, the positive leverage effect observed suggests that positive returns generate more instability in future returns than negative ones. This implies that volatility rises when the market is bullish and investors who are risk-averse would have to stay away from the stock market during this time. On the other hand, volatility subsides when the market is bearish and becomes a good time for risk-averse investors to invest. However, risk-lovers would find this situation favourable.

In terms of error distribution, the study concludes that the distribution of conditional errors for the Banking Index return, the Consumer Goods Index return, the Insurance Index and the NSE30 Index return, and by implication the NSE return, is no doubt far from being normal. Hence, studies on modeling and forecasting volatility in Nigeria conducted under the assumption of normal distributed conditional errors may suffer from mis-specification. Researchers and policy makers must therefore ensure that volatility models are estimated under the appropriate distribution that correctly fits the data.

REFERENCES

Agung, I. G. N. (2009). *Time series data analysis using Eviews.* Singapore: John Wiley & Sons Limited.

Ahmed, E. M. A., & Suliman, Z. S. (2011). Modeling stock market volatility using GARCH models evidence fromSudan. *International Journal of Business and Social Science, 2*(23), 114-128.

Aliyu, S. U. R. (2012). Reaction of stock market to monetary policy shocks during the Global Financial Crisis:The case of Nigeria. *CBN Journal of Applied Statistics, 3*(1), 17-41.

Atoi, N. V. (2014). Testing volatility in Nigeria stock market using GARCH models. *CBN Journal of Applied Statistics, 5*(2), 65-93.

Babatunde, O. A. (2013). Stock market volatility and economic growth in Nigeria. *International Review of Management and Business Research, 2*(1), 201-209.

Bachelier, L. (1900). Theory of speculation. Ph.D. Thesis, Faculty of the Academy of Paris.

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics, 31,* 307-327.

Bonga, W. G. (2012). Empirical analysis of stock returns and volatility of the Zimbabwean stock markets. *Atlantic International University working paper.*

Brooks, C. (2008). *Introductory econometrics for finance* (2nd ed.). Cambridge: Cambridge University Press.

Chiang, T. C., & Doong, S. (2001). Empirical analysis of stock returns and volatility: Evidence from seven Asian stock markets based on TAR-GARCH model. *Review of Quantitative Finance and Accounting, 17,* 301-318.

Chukwuogor, C. (2008). Stock markets returns and volatilities: A global comparison. *International Research Journal of Finance and Economics, 15,* 7-29.

Dallah, D., & Ibiwoye, A. (2010). Modeling and forecasting the volatility of the daily returns of Nigerian Insurance stocks. *International Business Research, 3*(2), 106-116.

De Medeiros, O., & Matsumoto, A. S. (2006). Market reaction to stock issues in Brazil: Insider trading, volatility effects and the new issues puzzle. *Investment Management and Financial Innovations, 3*(1), 142-150.

Dickey, D. A., & Fuller, W. A. (1979). Distribution of estimators for time series regressions with a unit root. *Journal of the American Statistical Association, 74,* 427-431.

Ding, Z., Granger, C. W. J., & Engle, R. F. (1993). A long memory property of stock returns and a new model. *Journal of Empirical Finance, 1,* 83–106.

Emenike, K. O. (2010). Modelling stock returns volatility in Nigeria using GARCH models. *Journal of Business Administration and Management, 5*(1), 9-15.

Emenike, K. O., & Ani, W. U. (2014). Volatility of the banking sector stock returns in Nigeria. *Ruhuna Journal of Management and Finance, 1*(1), 73-82.

Emenike, K. O., & Friday, A. S. (2012). Modeling asymmetric volatility in the Nigerian Stock Exchange. *European Journal of Business Management, 4*(12), 52-59.

Engle, R. F. (1982). Autoregressive conditional heteroskedasticity with estimates of the variance of United Kingdom inflation. *Econometrica, 50*(4), 987-1007.

Fama, E. F. (1965). The behaviour of stock market prices. *Journal of Business, 38,* 34-106.

Fama, E. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 25, 383-417.

Fama, E. F., & French, K. R. (1988). Permanent and temporary components of stock prices. *Journal of Political Economy, 96,* 246-273.

Fama, E. (1991). Efficient capital markets II. *Journal of Finance*, 46, 1575-617.

Fama, E .F. (1998). Market efficiency, long-term returns, and behavioural finance. *Journal of Financial Economics, 49*(3), 283-306.

Franses, P.H., & Ghijsels, H. (1999) Additive outliers, GARCH and forecasting volatility. *International Journal of Forecasting, 15*, 1-9.

Frimpong, J. M. & Oteng-Abayie, E. F. (2007). Market returns and weak-form efficiency: The case of the Ghana stock exchange. *MPRA paper No. 7582.*

Glosten, L., Jagannathan, R., & Runkle, D. (1993). On the relation between expected return on stocks. *Journal of Finance, 48,* 1779–1801.

Guidi, F., & Gupta, R. (2012). Forecasting volatility of the ASEAN-5 stock markets A nonlinear approach with non-normal errors. *Griffith Business School Discussion Paper in Finance.*

Gujarati, D.N. (2003). *Basic econometrics* (4th ed.). New York: Mc Graw-Hill Irwin.

Ikazoboh, E. (2013). A review of market performance in 2010 and the outlook for 2011. *The Nigerian Stock Exchange Factbook,* 1-18.

Karanason M., & Kim, J. (2006) A re-examination of the asymmetric power ARCH model. *Journal of Empirical Finance, 13,* 113-128.

Lo, A.W., & MacKinlay. A. C. (1999). *A non-random walk down Wall Street.* Princeton: Princeton University Press.

Long, T. L. (2008). Empirical analysis of stock return volatility with regime change using GARCH model: The case of Vietnam stock market. *Vietnam Development Forum Working Paper 084.*

Mobarek, A. (2012). Volatility tests of stock returns of an emerging market: Empirical evidence from Botswana stock exchange. *Stockholm University Working paper.*

Nelson, D. (1991). Conditional heteroscedasticity in asset returns: A new approach. *Econometrica, 59* (2), 347-370.

Olowe, R. A. (2009). Stock return, volatility and the global financial crisis in an emerging market: The Nigerian case. *International Review of Business Research Papers, 5*(4), 426-447.

Onwuke, C. E., Samson, T. K., & Lipcsey, Z. (2014). Modeling and forecasting daily returns volatility of Nigerian banks stocks. *European Scientific Journal, 10*(15), 449-467.

Osazevbaru, H. O., & Sakpaide, E. J. (2013). Leverage effect of stock market volatility: E vidence from Nigerian stock market. *AAU Journal of Management Sciences, 4*(1), 91- 101.

Osazevbaru, H. O. (2014). Measuring Nigerian stock market volatility. *Singaporean Journal of Business Economics and Management Studies, 2*(8), 1-14.

Osborne, M. F. M. (1959). Brownian motion in the stock market. *Operations Research, 7*(2), 145–173

Pagan, A. R., & William, S. G. (1989). Alternative models for conditional stock volatility. *National Bureau of Economic Research (NBER) Working Paper Series, 2955.*

Phillips, P. C. B., & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika, 75,* 335-346.

Poon, S. (2005). *A practical guide to forecasting financial market volatility.* West Sussex: John Wiley and Sons Limited

Poterba, J. M. & Summers, L. H. (1988). Mean reversion in stock prices: Evidence and implications. *Journal of Financial Economics, 22, 27–59.*

Samuelson. P. (1965). Proof that properly anticipated prices fluctuate randomly. *Industrial Management Review, 6*(2), 41–49.

Shleifer, A. (2000). *Inefficient markets: An introduction to behavioural finance.* Oxford: Oxford University Press.

Tsay, R. S. (2005). *Analysis of financial time series (2nd ed.).* New Jersey: John Wiley & Sons Inc.

Working, H. (1960). Note on the correlation of first differences of averages in a random chain. *Econometrica, 28*(4), 916–918.

Zakoian, J. M. (1994). Threshold heteroscedastic models. *Journal of Economic Dynamics and Control, 18,* 931–955.

AN EMPIRICAL ANALYSIS OF THE DETERMINANTS OF DIVIDEND POLICY IN NIGERIAN BANKS

Ndukwe O. Dibia[1]

[1]Department of Accounting, Abia State University, Uturu

ABSTRACT

The focus of this study was to provide research based- evidence on the influence of certain variables on dividend policy using Nigerian banks. Specifically, the study examines the effects of profitability, firm size, leverage and previous levels of dividend payout on dividend policy. Using fifteen banks with data period spanning 2006-2013 and employing the fixed effects regression estimates, our results show the effect of profitability on dividend policy, we found that ROA is positive and significant at 5%. The positive sign as expected suggest that profitable firms will pay dividends. However, the possibility of an inverse relationship as observed for ROE is also likely in two scenarios; (i) In situations where less cash flow is expected in the future a firm pays less and (ii) where the firm has investment opportunities. FSIZE is positive and significant at 5%. LEV appeared negative and also significant in line with aprori expectation. Previous period dividend {DIV (-1)} is positive though not significant at 5%. The study recommends that no doubt companies have corporate incentives to engage in dividend announcements and since the market value responds favourably. However, the study recommends further especially for the benefits of potential investors that given the wide-spread abuse of Dividends amongst companies it is increasingly becoming difficult to distinguish between "good" and "bad" companies solely by depending on which is paying dividends and hence investors should also border to investigate the company's fundamentals.

***Key words; Dividend policy*, profitability, firm size, leverage.**

1. INTRODUCTION

Corporate financial management especially with regard to firms' dividend policy decision is an established area of concern for both management, and researchers across an eclectic range of stakeholders linked with the firm (Ooi, 2001). The Dividend decision is reflected in the dividend policy of the firm which is one of the most important financial policies used in financial management. Dividend policy is the action programme used by a firm to decide how much of its residual profits will be paid out to shareholders in dividends while dividend signaling on the other hand deals with deliberate attempts by management using their dividend policy to communicate to the market and most especially investors about the financial prospects of the

company. When a firm engages in dividend signaling, there are quite a number of theoretical expectations that should follow which is a subject of debate.

According to Allen and Michaely, (2003) dividend policy connotes the payout policy, which managers pursue in deciding the size and pattern of cash distribution to shareholders over time. Selecting a suitable dividend policy is an important decision for the company because flexibility to invest in future projects depends on the amount of dividends that they pay to their shareholders. This policy is related to dividing the firm's earning between payment to shareholders and reinvestment in new opportunities. According to Li and Lie (2006), dividend policy entails the division of earnings between shareholders and reinvestment in the firm. They are normally paid in cash, and this form of dividend payment is known as cash dividend. Another option available to a company for the distribution of earnings is by stock dividend (bonus issue) which is supplementary to cash dividend.

Explaining why companies pay dividend and some do not pay dividends is still problematic to explain and therefore dividend policy remains controversial. Black (1976) puts it this way *"the harder we look at the dividends picture, the more it seems like a puzzle, with pieces that just do not fit together"*.

Some researchers like Amidu and Abor (2006) believe that setting dividend policy involves judgmental decision making and that there has been emerging concern that there is no single explanation of dividend. Due to increasing complexities, competition, global and corporate structure, it is difficult to single out one single factor affecting dividend and dividend policy. However any normative approach to dividend policy intended to be operative under real world conditions should consider the firms' investment opportunities, any preferences that investors have for dividends as opposed to capital gains and vice versa, and difference in "cost" between retained earnings and new equity issues.

The key research issue is that there appears not to be a reason to believe that corporate dividend policy is driven by a single goal. Researchers follow different approaches being theoretical and empirical, simple to complex models to study factors that are expected to have effects on dividend policy. However, despite the emergence of several decades of academic research no consistent agreement or consensus has emerged about the actual variables that determine dividend policy. For example Kanwer (2002) in his study analysed the factors that explain the dividend payout in companies listed on Karachi Stock Exchange using data from 1992-98. Results indicated positive relationships between dividend payout ratios and profitability, cash flow, and tax while the relationship was negative with growth and market to book value. Naeem & Nasr (2007) studied the dividend policy of the firms in Pakistan and the results showed companies with higher profit are more likely to pay

dividends. Liquidity was found to be insignificant in this study. Mohamed, et al. (2008) in their study of 200 companies in Malaysian capital market concluded that profitability and liquidity are significant variables in determining the dividend pay-out. Anil & Kapoor (2008) provided evidence using Indian companies and found that profitability does not determine dividend policy. Gill, Biger, & Tibrewala (2010) examined the determinants of dividend payout ratios using the data of American service and manufacturing firms. Results indicated that corporate tax and profitability were significant. Okpara & Chigozie (2010) examined determinants of dividend payouts in Nigeria and found that the current ratio, profitability and dividends for last year are very important determinants of dividend pay-out. Consequently, this failure to find any consistent agreement in the factors that determine dividend policy is a gap identified that serves as a motivation for this study.

The objective of the research is to examine the determinants of dividend policy in Nigerian banks. Specifically, the study examines the effects of profitability, firm size, leverage and previous level dividend payout on dividend policy.

2. LITERATURE REVIEW

Kumar and Sharma, (2001) opined that dividend policy deals with the division of earnings between payments to shareholders and retained earnings. Nissim & Ziv (2001) also defined dividend policy as the regulations and guidelines that a company uses to decide to make dividend payments to shareholders. Baker and Smith (2002) defined dividend policy as the practice that management follows in making dividend payout decisions, which determines the size and pattern of cash distributions over time to shareholders. These distributions may be through dividends and share repurchases. Adefila et al (2013) went further to state that a dividend policy is a deliberate policy to maintain or increase dividend at a certain level with the ultimate aim of sustaining the price of the ordinary shares on the stock exchange.

Lee (2009) defined dividend policy as the policy used by a company to decide how much it will pay out to shareholders in dividends. He went further to state that dividends are usually distributed in the form of cash (cash dividends) or share (share dividends). In order for a company to distribute cash dividend, it must have sufficient cash to do so. This however creates a cash flow issue. Petersburg (2013) also defined dividend policy as a set of principles of the Company governing the optimal distribution of the Company's profit after taxation in order to increase the wealth of the Company's shareholders both through distribution of a part of the net profit in

the form of dividends and through increase of the Company's share value resulting from its increased capitalization.

Simply put, a firm's dividend policy refers to its choice of whether to pay out cash to shareholders, in what fashion, and in what amount. The most obvious and important aspect of this policy is the firm's decision whether to pay a cash dividend, how large the cash dividend should be, and how frequently it should be distributed. In a broader sense, dividend policy also encompasses decisions such as whether to distribute cash to investors via share repurchases or specially designated dividends rather than regular dividends, and whether to rely on stock rather than cash distributions. Non-traditional forms of dividend payments, especially share repurchases are much more commonly used today, and so the dividend decision is much more complex in today's corporate environment.

Determinants of Dividend Policy

Profitability

Lintner (1956) found that the most important factor influencing dividend decisions is the association between present earnings and the dividend rate. Jensen et al. (1992) also asserted a positive link between dividends and current profitability that can be measured by the ratio of operating income to total assets. Fama and French (2002) suggested that this relationship happens in order to mitigate the agency problem as enterprises with higher profits have more free cash flows; additionally, more profitable firms can still pay greater dividends without financing investments with risky debt and equity in accordance with the pecking order model. Most authors proved a positive association between profitability and the payment of dividends in different countries such as America, Argentina or Tunisia. Directors normally recommend the payment of dividend when the firm has made sufficient profit to warrant such payments. This result is also supported by the signalling theory of dividend policy.

H1: There is no significant relationship between profitability and dividend policy.

Firm size

Firm size variable has become a key variable in prior literature to explain the firm's decision to pay dividends. Redding (1997), and Fama and French (2001) indicated that large firms distribute a higher amount of their net profits as cash dividends, than do small firms. Several studies have tested the impact of firm size on the dividend-agency relationship. They found that firm size as important explanatory variable, as large companies are more likely to increase their dividend payouts to decrease agency costs. Furthermore,

Sawicki (2005) illustrated that dividend payouts can help to indirectly monitor the performance of managers in large firms. That is, in large firms, information asymmetry increases due to ownership dispersion, decreasing the shareholders' ability to monitor the internal and external activities of the firm, resulting in the inefficient control by management. Paying large dividends can be a solution for such a problem because large dividends lead to an increase in the need for external financing, and the need for external financing leads to an increase in the monitoring of large firms, because of the existence of creditors. Other studies related the positive association between dividends and firm size to transaction costs. For example, (Holder, *et al.*, 1998) revealed that larger firms have better access to capital markets and find it easier to raise funds at lower costs, allowing them to pay higher dividends to shareholders. This demonstrates a positive association between dividend payouts and firm size

H2: There is no significant relationship between firm size and dividend policy.

Leverage

Debt level measures the level at which a corporation relies on external funds to finance investments (Al-Najjar and Hussainey, 2009). A correlation between debt level and dividend disbursement is expected from the trade-off theory and pecking order theory. Several authors examined this relationship but until now there are competing ideas. Chang and Rhee (1990) supported a positive association because they argued that higher financial leverage exists in relation to lower shareholder tax rates, so it makes the firm willing to pay higher dividends. Belden et al. (2005) also found, when they test 524 large American firms in the list of Forbes 500 from 1998 to 2000, that debts are still used in companies applying dividend policy to control agency problems. On the other hand, the view of Jensen et al. (1992) was different in that they believed financing from equity is more attractive to firms having high dividend ratios than from debt, so low ratios of long -term debt to the book value of total assets often happen in these companies. Bebczuk (2005) and Kowalewski et al. (2008) agreed with the idea of Jensen et al. (1992) in that they thought that firms with high leverage seem not to want to reimburse high dividends and get more loans with the purpose of limiting default risk. Neutrally, Al-Najjar and Hussainey (2009) suggested there is no relation between these two factors because of the statistically insignificant results of hypothesis tests. Naceur et al.'s (2006) results showed that the total debt to the equity's market value does not affect the dividend yield.

H3: There is no significant relationship between leverage and dividend policy.

Pattern of past dividends

Previous year's dividend payment (LDPS) have been regarded as the primary indicator of a firm's capacity to pay dividends (Lintner, 1956), because it is assumed that the management will maintain a stable dividend policy. Furthermore, the information asymmetry hypothesis assumes that dividend policy is "sticky" or shows a tendency to remain at the level of previous dividends (Baskin, 1989). Ahmed and Javid (2009) examined the dynamics and determinants of dividend payout policy of 320 non-financial firms. The results consistently support that firms rely on both current earnings per share and past dividend per share to set their dividend payments. However, the dividend tends to be more sensitive to current earnings than prior dividends. Lintner (1956) indicated that companies avoid changing dividend rates and prefer to reserve them and attempt to maintain an uninterrupted record of dividend payout. Baker et al (1985), Baker and Powell (1999) and Baker et al. (2001) showed that managers pay more attention to change in dividend payouts than the level and they tend to smooth the pattern of dividend growth. Baker et al (2002) stressed the importance of maintaining dividend continuity. If dividend payout has been maintained at a constant level in the past, the same will be done in the future. Companies tend not to increase dividend payout unless they are confident that they can sustain such increase.

H4: There is no significant relationship between past dividend payments and dividend policy.

3. METHODOLOGY

As against the cross-sectional or time series design often used, this study will utilize the more robust Panel data design which may be seen as a combination of both cross-sectional and time-series design properties. The population consists of all banks quoted on the Nigeria Stock Exchange as at December 31, 2014. The sample size for this study is 15 banks. The sample of fifteen banks was selected using the simple random sampling technique. In this study, secondary data, by way of annual reports and accounts of the sampled banks in Nigeria and some relevant NSE fact books were used to collect data for eight years (2006 to 2013). The Panel data regression using the generalized least squares technique was used as data analysis method for the study. The use of panel data regression methodology in this study is based on three fundamental justifications (1) The data collected had time and cross sectional attributes and this will enable us to study the variables over time (time series) as well as across the sampled quoted companies (cross-section) (2) Panel data regression provide better results since it increases sample size and reduces the problem of degree of freedom. (3) The use of panel regression

would avoid the problem of multicollinearity, aggregation bias and endogeneity problems (Greene, 2002)

Model Specification

Following the literature and theoretical framework of this study, our models focus on evaluating the determinants of dividend policy as indicated by the dividend payout ratio for banks in Nigeria. Specifically the model for the study in line with prior models which examined similar issues; Alzomaia and Al-Khadhiri (2013) model, Uwuigbe (2013) model Agyemang (2013) model, Rafique (2012) model and Trang (2012) model. The model adapted for this study is specified as follows:

$$DIVPOUT_{it} = \partial_0 + \partial_1 PROFIT_t + \partial_2 LIQ_{it} + \partial_3 LEV_{it} + \partial_4 FSIZE + \partial_5 GRWT_{it} + \partial_5 DIV(-1)_{it} + \mu_{it} \quad (1)$$

Where; DIVPOUT= Dividend payout ratio
PROFIT= Profitability
LIQ= Liquidity
LEV= Leverage
FSIZE= Firm size
GRWT= Growth
DIV (-1) = one period lag of dividend payout

Table 1: Variable Measurement

Variable	Measurement	Aprori expectation
Dividend payout policy (DIVPOUT)	Dividend Payout ratio is measured as the dividend per equity share divided by earnings per share.	
Profitability (PROFIT)	ROE_{it} = Return on Equity for firm i at time t (in years). Used as a proxy for performance and is measured as net profit after tax divided by shareholders equity.	
Leverage(LEV)	Leverage is measured as the Ratio of debt to equity.	+
Firm size (FSIZE)	Firm's size is measured by the natural logarithm of the total assets.	+
DIV (-1)	Measured as One period lag of dividend payout.	+

Control Variables		
Liquidity (LIQ)	Liquidity is measured as balance of net cash flow.	
Growth (GRWT)	Change in total assets.	+

Source: Researchers Compilation (2015).

4. PRESENTATION AND ANALYSIS OF DATA

Table 2 shows the descriptive statistics for the variables used in the study.

Table 2: Descriptive Statistics

	DIV	FSIZE	GRWTH	LEV	LIQ	ROA	ROE	DIV(-1)
Mean	0.377	267000000	0.193	0.761	18880086	0.048	3.486	0.448
Median	0.000	146000000	0.240	0.820	5127401	0.020	0.120	0.000
Maximum	6.140	1330000000	1.160	1.300	153000000	0.950	13.07	6.140
Minimum	0.000	1.043	-3.900	-0.31	0.500	-0.500	-4.80	0.000
Std. Dev.	0.982	333000000	0.578	0.259	4321860	0.177	32.93	1.045
Skewness	3.936	1.291	-4.294	-1.93	2.769	2.396	9.16	3.402
Kurtosis	20.53	4.011	30.594	7.474	8.792	18.217	84.90	15.922
Jarque-Bera	1338	28	3028	127	233	923	25532	773
Prob	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Source: Researchers Compilation (2015)

Where: LIQ= Liquidity
GRWTH = Firm Growth
LEV= Leverage
ROA= Return on Assets
ROE= Return on equity
FSIZE= Firm size
DIV= Dividend
DIV (-1) = Previous period dividend.

As observed in Table 2, DIV show the following statistics; Mean= 0.3774, STD= 0.9819 which indicates the extent to which discretional accruals for the distribution exhibits considerable clustering around the average, Max= 1.14 and Min= 0. This is quite close to Uwuigbe, Jafaru and Ajayi (2012)

which found average dividend ratio for the sample to be 0. 43148 with Max= 0.995 and min =0 using fifty listed firms operating in high profile industries. Using a more robust sample of over 63 quoted firms 63 quoted from 1984 to 1997 and categorizing on the basis of gearing ratios Adelegan (1998) found slightly different average dividend pay-out ratios of 0.076, 0.079 and 0.819 for moderately geared, low geared and highly geared companies respectively. FISIZE show the following statistics; Mean = 2.67E+08, STD=3.33E+08, Max= 1.33E+09 and Min= 0. For GRWTH, Mean= 0.1929, STD= 0.5775, Max= 1.16 and Min= -3.9. Badu (2003) found the following growth statistics [mean=1.146305 min= -.3260779 and max= 9.893576] for Ghanaian banks. Badu (2003) found the following growth statistics [mean=1.146305 min= -.3260779 and max= 9.893576] for Ghanaian banks. LEV show the following statistics; Mean= 0.7606, STD= 0.5775, Max= 1.16 and Min= -0.31. For LIQ, Mean= 18880086, STD = 4321860, Max = 1.53E+08 and Min= 0.5. ROA show the following statistics; Mean= 0.047, STD= 0.177, Max= 0.95 and Min= -0.5 and this not significantly different from Badu's (2003) finding [mean = 0.3442, Min= 0.00717 and Max =0.0922] for all eleven financial institutions in Ghana from 2005-2007. For ROE, Mean= 0.4862, STD = 32.9290, Max =2.07 and Min = -4.8. Uwuigbe, et al (2012) found average ROE to be 0.3357, max = 0.955 and min =-.379. DIV (-1) show the following statistics; Mean= 0.44, STD= 1.0448, Max= 6.14 and Min= 0.

Table 3. Pearson Correlation Result

	DIV	FSIZE	GRWTH	LEV	LIQ	ROA	ROE	DIV(-1)
DIV	1							
FSIZE	0.106	1						
GRTH	0.019	0.033	1					
LEV	0.070	0.088	-0.025	1				
LIQ	0.020	-0.059	0.003	-0.033	1			
ROA	0.056	0.126	0.074	0.031	-0.002	1		
ROE	-0.042	0.082	-0.267	-0.011	0.334	-0.031	1	
DIV(-1)	0.178	0.158	0.063	0.133	-0.138	0.195	-0.048	1

Source: Researchers Compilation (2015)

From Table 3 above, the correlation coefficients of the variables are examined. However, of particular interest to the study are the correlation between; dividend policy and the explanatory variables. As observed, DIV is positively correlated with Firm size (r=0.106) and this in tandem with Uwuigbe (2013) using Nigerian firms quoted on the stock exchange and found

a positive strong correlation coefficient (r=0.7709) and also with Fodio (2009) (r=0.1058). It is also similar to the coefficient (r=0.007) found by Arif and Akbar (2013) using 174 non-financial firms listed on Karachi Stock Exchange and that (r=0.0779) found by Rafique (2012) using Non-Financial Firms listed in the KSE100 Index. It is however at variance with Alzomaia and Al-Khadhiri (2013) which found a negative coefficient (r=-0.021) using firms quoted on the Saudi stock exchange. DIV is also positively correlated with GRTH (r= 0.0188). The coefficient is low but is nevertheless consistent with other empirical studies (Agyei and Marfo-Yiadom, 2011, Fodio 2009; Badu 2012,) that found a positive correlation coefficient. However, using Non-Financial Firms listed in the KSE100 Index, Rafique (2012) found a negative correlation (r=-0.00316) between dividend policy and growth.

LEV is also positively correlated with (r=0.07015) and this is in tandem with Osegbue, Ifurueze and Ifurueze (2012) which found a correlation coefficient of 0.245 using Nigerian banks. The finding is however at variance with that of Alzomaia and Al-Khadhiri (2013) which found a correlation coefficient of -0.44. DIV is also positively correlated with LIQ (r=0.01974) and is consistent wit Amidu and Abor, (2006) but is different from what was found (r=-0.18) by Alzomaia and Al Khadhiri (2013) using firms quoted on the Saudi stock exchange. Previous period dividend [DIV (-1)] also appears to be positively correlated with Dividend policy (r= 0.178) which is in tandem with 0.561 found by Alzomaia and Al-Khadhiri (2013). DIV is also positively correlated with ROA (r=0.056) and this is in tandem with Uwuigbe (2012) which found a positive correlation coefficient (r=0.3776). DIV is negatively correlated with ROE (r=-0.0417) though contrary to Uwuigbe, Jafaru and Ajayi (2012) which found a positive correlation coefficient (r=0.441). The Inter-correlations between the explanatory variables do not seem to indicate the presence of multicollineraity threats for most of the variables. For example, we find that FSIZE is negatively correlated with LIQ(r=-0.059) and BSR(r=-0.133). LEV is positively correlated with DIV (-1) (r=0.0729). GRWTH is positively correlated with LIQ (r=0.0029) and ROA (r=0.074). FSIZE is positively correlated with ROA(r=0.126) and ROE (r=0.081). Nevertheless, the variance inflation test is performed to provide robust evidence of the collinear status of the variables.

Table 4 shows the regression result for the study. As observed the estimation is conducted using the fixed effects (FE), random effects (RE) and Pooled OLS estimation techniques. The FE estimation shows a coefficient of determination value of 0.581 which indicates that the model explains about 58.1% of the systematic variations dividend policy with an adjusted value of 0.446. The F-stat is 4.292 (p-value = 0.00) which is significant at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be rejected. It is also indicative of

the joint statistical significance of the model. The D. W statistics of 1.9 also substantiates this. Commenting on the performance of the structural coefficients, we observe that LIQ is positive (5.50) though not significant at 5% (p=0.994). GRWTH is negative (-0.003) and not significant at 5% (p=0.772). However, LEV appeared negative (0.0231) and also significant at 5% (p=0.003). In addition, we observe that we observe that ROA is positive (0.0611) and significant at 5% (p=0.003). ROE is negative (-0.001) and significant (p=0.016) at 5%. FSIZE is positive (4.95E-10) and significant at 5% (p=0.000) while DIV (-1) is negative (-0.0140) though not significant at 5% (p=0.8612).

Table 4: Regression Result

Dependent variable	FE	RE	POLS
C	0.2706 {0.036} (0.000)	0.0979 {0.2117} (0.6448)	0.0392 {0.059} (0.5083)
LIQ	5.50 {7.42} (0.994	1.62 {2.50} (0.5189)	2.63 {6.17} (0.6714)
GRWTH	0.0033 {0.0116} (0.7723)	-0.0208 {0.080} (0.7970)	-0.0296 {0.0362} (0.4151)
LEV	-0.0231* {0.007} (0.003)	0.1585 {0.1552} (0.3103)	0.00049 {0.0527} (0.992)
ROA	0.0611* {0.007} (0.003)	0.0623 {0.5630} (0.9122)	-0.0121 {0.0928} (0.896)
ROE	-0.0010* {0.001} (0.0161)	-0.002* {0.0008} (0.0197)	-0.0008 {0.0004} (0.027)
FIRM SIZE	4.95E-10* {1.32E-11} (0.000)	2.52E-10 {1.59E-10} (0.117)	2.81E-10 {1.12E-10} (0.0137)
DIV(-1)	-0.0140 {0.0799) (0.8612)	0.154* {0.073) (0.038)	0.1715 {0.0532) (0.002)
R^2	0.581	0.046	0.112

ADJ R^2	0.446	0.038	0.034
F-Stat	4.292	0.542	1.427
P(f-stat)	0.00	0.799	0.206
D.W	2.16	2.21	2.12
Hausman test: 0.041			

Source: Researchers Compilation (2014), { } are standard errors, ( ) are p-values
N.b: FE = Fixed effects, R=Random effects and POLS= Pooled Ordinary least squares.

The RE estimation shows a coefficient of determination value of 0.046 with an adjusted value of 0.038. The F-stat is 0.542 (p-value = 0.799) which is significant not at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be accepted. The D. W statistics of 2.21 indicates the presence of serial correlation is unlikely. Commenting on the performance of the structural coefficients, we observe that LIQ is positive (1.62) but not significant at 5% (p=0.797). GRWTH is negative (-0.0208) and not significant at 5% (p=0.772). However, LEV appeared positive (0.1585) though not significant at 5% (p=0.3103). In addition, we observe that we observe that ROE is negative (-0.002) and significant at 5% (p=0.0197) while ROA is positive (0.0623) though not significant at 5% (p=0.9122). FSIZE is positive (2.52) though not significant at 5% (p=0.117) while DIV (-1) is positive (0.154) and significant at 5% (p=0.038). The POLS estimation shows a coefficient of determination value of 0.112 with an adjusted value of 0.034. The F-stat is 1.427 (p-value = 0.206) which is significant not at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be accepted. The D. W statistics of 2.12 indicates the presence of serial correlation is unlikely. Commenting on the performance of the structural coefficients, we observe that LIQ is positive (2.63E-10) but not significant at 5% (p=0.6714). GRWTH is negative (-0.0296) and not significant at 5% (p=0.415). However, LEV appeared positive (0.0005) though not significant at 5% (p=0.992). In addition, we observe that we observe that ROE is negative (-0.008) and significant at 5% (p=0.027) while ROA is also negative (-0.0121) though not significant at 5% (p=0.898).FSIZE is positive (2.81E-10) and significant at 5% (p=0.0137) while DIV (-1) is positive (0.154) and also significant at 5% (p=0.002).

Discussion of Result

In this section, the results will be discussed and the hypotheses raised will be tested. Based on the Hausman test, the fixed effects estimations will be used for the discussion.

On the effect of profitability on dividend policy, we found that ROA is positive (0.0611) and significant at 5% (p=0.003), ROE is negative (-0.001) and significant (p=0.016) at 5%. Though the direction of sign of the coefficients differs for ROE and ROA, statistical significance is nevertheless observed for the variables. The positive sign as expected suggest that profitable firms will pay dividends and this is in tandem with Al-Kuwari (2009), Eriostis and Vasiliou, 2003; Ahmed and Javid, 2009). Hence we reject the null hypothesis (H1) that there is no significant relationship between profitability and dividend policy. The finding is also similar to that of Reddy (2006) which found that dividends paying firms are more profitable and Amidu and Abor (2006) that agreed that dividend payout policy decision is influenced by profitability. However, the possibility of in inverse relationship as observed for ROE is also likely in two scenarios; (i) In situations where less cash flow is expected in the future a firm less and (ii) where the firm has investment opportunities. This is in tandem with Al- Kuwari (1998) and Kowalewski (2007).

FSIZE is positive (4.95) and significant at 5% (p=0.000) in line with aprori expectation, the relationship between firm's size and dividends is positive and hence we reject the null hypothesis (H2) that there is no significant relationship between firm size and dividend policy. The positive relationship between dividend payout policy and firm size is also supported by a growing number of other studies (Eddy and Seifert, 1988; Jensen et al., 1992; Redding, 1997; Holder et al., 1998; Fama and French, 2000; Manos, 2002; Mollah 2002; Travlos et al., 2002; Al-Malkawi, 2007; Al Kuwari 2009). Similarly, Duha Al-Kuwari (2009) using firms listed on Gulf Co-operation Council (GCC) country stock exchanges found that where firm size is high companies make dividend payments.

The FE estimation shows that LEV appeared negative (-0.0231) and also significant at 5% (p=0.003). In line with aprori expectation, the relationship between leverage and dividends is negative and significant and hence we reject the null hypothesis (H3) that there is no significant relationship between leverage and dividend policy. A mounting number of studies have found that the level of financial leverage negatively affects dividend policy (Gugler and Yurtoglu, 2003; Faccio et al., 2001; Al-Malkawi, 2005; Adelegan 2003).Their studies argued that highly levered firms instead of sharing existing cash to shareholders and protect their creditors they rather look ahead to maintaining their internal cash flow to fulfil duties of future financial obligations. In contrast to our finding, Chang and Rhee (1990) supported a positive association, Belden et al. (2005) also found, when they test 524 large American firms in the list of Forbes 500 from 1998 to 2000, that debts exist for companies applying dividend policy to control agency problems. Neutrally, Al-Najjar and Hussainey (2009) suggested there is no

relation between these two factors while Naceur et al.'s (2006) results showed that the total debt to the equity's market value does not affect the dividend payments.

As shown in table 4.7, previous period dividend {DIV (-1)} is positive (0.0140) though not significant at 5% (p=0.8612) and hence we accept the null hypothesis (H4) that there is positive significant relationship between previous period divided and dividend policy. Previous year's dividend payment (LDPS) have been regarded as the primary indicator of a firm's capacity to pay dividends (Lintner, 1956), because it is assumed that the management will maintain a stable dividend policy. The finding however, is in tandem with Mollah et al. (2001), Bebczuk (2005) but in contrast with Ahmed and Javid (2009) and Kowalewski et al. (2008) which found dividends payments in previous periods affects firms' current period dividend policy.

5. CONCLUSION AND RECOMMENDATION

As earlier stated, the Dividend decision is reflected in the dividend policy of the firm which is one of the most important financial policies used in financial management. Dividend policy is the action programme used by a firm to decide how much of its residual profits will be paid out to shareholders in dividends while dividend signaling on the other hand deals with deliberate attempts by management using their dividend policy to communicate to the Explaining why companies pay dividend and some do not pay dividends is still problematic to explain and therefore dividend policy remains controversial. The focus of this study was thus to provide research based-evidence on the influence of certain variables on dividend policy using Nigerian banks. Using fifteen banks for 2006-2013 and employing the fixed effects regression estimates, our results show the effect of profitability on dividend policy, we found that ROA is positive and significant at 5%. The positive sign as expected suggest that profitable firms will pay dividends. However, the possibility of in inverse relationship as observed for ROE is also likely in two scenarios; (i) In situations where less cash flow is expected in the future a firm less and (ii) where the firm has investment opportunities. This is in tandem with Al- Kuwari (1998) and Kowalewski (2007). FSIZE is positive and significant at 5%. LEV appeared negative and also significant in line with aprori expectation. Previous period dividend {DIV (-1)} is positive though not significant at 5%. The study recommends that no doubt companies have corporate incentives to engage in dividend announcements and since the market value responds favourably, companies should engage in dividends payments and adopt a dividend pay-out policy that is investor friendly. However, the study recommends further especially for the benefits of potential investors that given the wide-spread abuse of Dividends amongst companies it

is increasing becoming difficult to distinguish between "good" and "bad" companies solely by depending on which is paying dividends and hence investors should also border to investigate the company's fundamentals.

REFERENCES

Adefila, J. J., Oladipo, J. A. & Adeoti, J. O. (2013). The Effect of Dividend Policy on the Market Price of Shares in Nigeria: Case Study of Fifteen Quoted Companies. Available online at http://unilorin.edu.ng/publications/adeotijo/

Adelegan, O. J. (1998). The Impact of Growth Prospect, Leverage and Firm Size of Dividend Behavior of Corporate Firms in Nigeria. The Centre for Econometric and Allied Research UI, Nigeria.

Adelegan, O. J. (2003). An empirical analysis of the relationship between cash flow and dividend changes in Nigeria. *African Development Review,* 15(1), 35-49.

Agyei, S. K., & Marfo-Yiadom, E. (2011). "Dividend Policy and Bank Performance in Ghana, *International Journal of Economics and Finance,* 3(4).

Agyemang, E. B. (2013). Determinants of dividend payout policy of listed financial institutions in Ghana. *Research Journal of finance and accounting,* 4(7), 185-190.

Ahmed, H. & Javid, A. Y. (2009). "Determinants of Dividend Policy in Pakistan," *International Research Journal of Finance and Economics* 29, 110- 125.

Allen, F. & Michaely, R. (2003). Payout policy. In Handbook of the Economics of Finance, ed. G. M Constantinides, M Harris, R Stulz, pp. 337-429. Amsterdam: Elsevier, North-Holland.

Al-Kuwari, D. (2009). "Determinants of the Dividend Policy in Emerging Stock Exchanges: The Case of GCC Countries", *Global Economy & Finance Journal,* 2(2), 38-63.

Al-Malkawi, H. N. (2005). "Dividend Policy of Publicly Quoted Companies in Emerging Markets: The Case of Jordan", Doctoral Thesis, School of Economics and Finance (University of Western Sydney, Sydney).

Al-malkawi, H. N. (2007). Determinants of Corporate Dividend Policy in Jordan: An Application of the Tobit Model, *Journal of Economic & Administrative Sciences*, 23(2), 44-70.

Al-Najjar, B. & Hussaianey, A. (2009). The association between dividend payout and outside directorship. *Journal of Applied Accounting Research,* 10(1), 4-19.

Alzomaia, T. S. & Al-Khadhiri, A. (2013). Determination of Dividend Policy: The Evidence from Saudi Arabia, International *Journal of Business and Social Science,* 4(1), 181-192.

Amidu, M. & Abor, J. (2006). "Determinants of dividend payout ratios in Ghana", *The Journal of Risk Finance* 7, 136-145.

Anil, K., & Kapoor, S. (2008). Determinants of Dividend Payout Ratios - a Study of Indian Information Technology Sector. *International Research Journal of Finance and Economics,* 15(May), 63–71.

Arif, A. & Akbar, F. (2013). Determinants of dividend policy; A sectoral analysis from Pakistan. *International Journal of Business and Behavioral Sciences,* 3(9), 16-33.

Baker, H. K., Farrelly, G. E. & Edelman, R. B. (1985). A survey of management views on dividend policy. *Financial Management,* 14 (3), 78-84.

Baker, H. K. & Powell, G. E. (1999). How corporate managers view dividend policy?. *Quarterly Journal of Business and Economics,* 38 (2), 17-27.

Baker, H. K., Veit, E. T. & Powell, G. E. (2001). Factors influencing dividend policy decisions of Nasdaq firms. T*he Financial Review*, 36 (3), 19-37.

Baker, H. K, & Smiht, D. M. (2002). In search of a residual dividend policy. University of Albany and American University.

Baskin, J. (1989). Dividend Policy and the Volatility of Common Stock. *Journal of Portfolio Management,* 15(0), 19–25.

Bebczuk, R. (2005). Corporate governance and ownership: measurement and impact on corporate performance and dividend policies in Argentina, Center for Financial Stability, Working Paper.

Belden, S., Fister, T. & Knapp, B. (2005). Dividends and Directors: Do Outsiders Reduce Agency Costs? *Business and Society Review,* 110(2), 171-180.

Black, F. (1976). The dividend puzzle. *Journal of Portfolio Management,* 2(2), 5-8.

Chang, R. P. & Rhee, S. G. (1990), "The impact of personal taxes on corporate dividend policy and capital structure decisions", *Financial Management,* 19(2), 21-31.

Eddy, A. & Seifert, B. (1988). "Firm Size and Dividend Announcements", *Journal of Financial Research* 11, 295-302.

Eriotis, N. & Vasilou, D. (2003). "Dividend Policy: An empirical Analysis of the Greek Market," *International Business and Economics Research Journal*, 3(3), 49-57.

Faccio, M., Lang, L. & Young, L. (2001). "Dividends and expropriation", American Economic Review 91, 54–78.

Fama, E. F., & French, K. R. (2000). "Testing tradeoff and pecking order predictions about dividends and debt", The Center for research in Security Prices Workinh Paper 506.

Fama, E. F., & French, K. R. (2001). Changing Firm Characteristics or Lower Propensity. *Journal of Financial Economics,* 3-43.

Fama, E. F., & French, K. R. (2002). Testing Trade-Off and Pecking Order Predictions about Dividends and Debt, *The Review of Financial Studies* 15, 1-33.

Fodio, M. I. (2009). The dividend policy of firms quoted on the Nigerian stock exchange: An empirical analysis. *African Journal of Business Management,* 3(10), 555-566.

Gill, A., Biger, N., & Tibrewala, R. (2010). Determinants of Dividend Payout Ratios: Evidence from United States. *The Open Business Journal* III, 08-14.

Green, H (2002): "Econometric analysis" fifth edition. Prentice hall, upper saddle river. New Jersey.

Gugler, K. & Yurtoglu, B. (2003). "Corporate governance and dividend pay-out policy in Germany", *European Economic Review* 47, 731-758.

Holder, M. E., Langrehr, F. W. & Hexter, J. L. (1998). Dividend policy determinants: an investigation of the influences of stakeholder theory. *Financial Management (Financial Management Association),* 27(3), 73-82.

Jensen, G., Solberg, D., & Zorn, T. (1992). Simultaneous determination of insider ownership, debt, and dividend policies. *Journal of Finance and Quantitative Analysis 27,* 247-263.

Kanwer, A. (2002). The Determinants of Corporate Dividend Policies in Pakistan: an Empirical Analysis.

Kowalewski, O. (2007). *Financial system in M. Weresa* (ed.), Competitiveness Report 2007. The role of foreign direct investment, World Economy Research Institute, Warsaw School of Economics.

Kowalewski, O., Stetsyuk, I., & Talavera O. (2008). Corporate governance and dividend policy in Poland, *Post-Communist Economies*, 20 (2), 203-218.

Kumar, A. & Sharma, R. (2001) "Financial Management: Theory and Practice", Atlantic Publishers and Distributors, New Delhi, 2001, p-494.

Lee, S. P. (2009). Dividend policy, PBE management accounting and finance. The Chinese University of Hong Kong.

Li, W. & Lie, E. (2006). Dividend changes and catering incentives. *Journal of Financial Economics,* 80(2), 293–308.

Lintner, J. (1956). Distribution of Incomes of Corporations among Dividends, Retained Earnings, and Taxes. *American Economic Review,* (46), 97-113.

Manos, R.. (2002). "Dividend Policy and Agency Theory: Evidence on Indian Firms", Working Paper, Institute for Development Policy and Management, University of Manchester.

Mohamed, N., Hui, W. S., Omar, N. H., Rahman, R. A., Mastuki, N., Azis, M. A. (2008). Empirical Analysis of Determinants of Dividend Payment: Profitability and Liquidity.

Mollah, S., Keasey, K. & Short, H. (2002). "The Influence of Agency Costs on Dividend Policy in an Emerging Market: Evidence from the Dhaka Stock Exchange".

Naceur, S., Goaied, M. & Belanes, A. (2006). On the Determinants and Dynamics of Dividend Policy. *International Review of Finance,* 6(1-2), 1- 23.

Naeem, S., & Nasr, M. (2007). Dividend Policy Of Pakistani Firms: trends and determinants. *International Review of Business Research Papers,* III(3), 242-254.

Nissim, D. & Ziv, D. (2001). Dividend changes and future profitability. *Journal of Finance,* 56(6), 2111–2133.

Okpara, & Chigozie, G. (2010). A Diagnosis of the Determinant of Dividend Pay-Out Policy in Nigeria: A Factor Analytical Approach. *American Journal of Scientific Research* (8), 57-67.

Ooi, J. T. L. (2001). Dividend payout characteristics of U.K. property companies. *Journal of Real Estate Portfolio Management,* 7(2), 133-142.

Osegbue, I. F., Ifurueze, M. & Ifureze, P. (2014). An analysis of the relationship between dividend payment and corporate performance of Nigerian Banks. *Global Business and Economic Research Journal,* 75-95.

Petersburg, S. (2013). Regulation on the dividend policy of JSC, Sibur Holding version No.4

Rafique, M. (2012). Factors Affecting Dividend Payout: Evidence from Listed Non-financial Firms of Karachi Stock Exchange. *Business Management Dynamics,* 1(11), 76-92.

Redding, L. S. (1997). Firm Size and Dividend Payouts. *Journal of Financial Intermediation* 6, 224-248.

Reddy (2006) Dividend Policy of Indian Corporate Firms: An Analysis of Trends and Determinants. (Working Paper Series).

Sawicki, J. (2005). An Investigation into the Dividend of Firms in East Asia, Working Paper, Nanyang Technological University, Singapore.

Travlos, N., Murinde, V. & Naser, K. (2002). "Dividend Policy of Companies Listed on Young Stock Exchanges: Evidence from the Muscat Stock Exchange", Working Paper.

Uwuigbe, U., Jafaru, J. & Ajayi, A. (2012). Dividend Policy and Firm Performance: A Study of Listed Firms in Nigeria. *Accounting and Management Information Systems,* 11(3), 442–454.

Uwuigbe, O. R. (2013). Determinants of dividend policy: A study of selected Listed firms in Nigeria. *Change and Leadership* 17, 107-119.

AN EXAMINATION OF THE FINANCIAL INTERMEDIATION ROLE OF THE NIGERIAN CAPITAL MARKET AND PERFORMANCE OF MANUFACTURING FIRMS

Nneka R. Ikeobi[1]

[1]Department of Business Administration, University of Jos, Nigeria.

E-mail
nikeobi2002@yahoo.com

ABSTRACT

Using a micro-level approach and firm-level data, this paper examines the role of the Nigerian capital market in the provision of funds to the manufacturing sector, which by its productive nature has the greatest potential to impact on the economic growth and development of a country, by examining the relationships between the mobilization and allocation functions of the capital market and the performance of the 13 manufacturing firms included in the study. Panel data for a 10-year period; 2002-2011 was analyzed using a multiple regression model and ordinary least squares estimation technique. Return on equity (ROE) was adopted as the proxy for firm performance, while firms' share capital and annual market capitalization of the firms were proxies for funds raised and supplied to the firms. Equity market turnover ratio was proxy for capital market allocation/information efficiency. The results showed that there was a negative and significant relationship between share capital and ROE and a positive and significant relationship between market capitalization and ROE. This implies that the manufacturing firms have not accessed fresh capital from the capital market, even as the market has shown the potential to supply funds to the manufacturing firms during the period under study. The negative relationship between market turnover ratio and ROE shows the market was generally illiquid and points to the inefficiency of the market to effectively allocate funds to the productive sectors of the economy. The policy implication of these findings is that efforts should be geared at removing all identified impediments to capital market operations especially on the demand side to make it more attractive and accessible to entrepreneurs.

Key Words: Financial Intermediation Role, Nigerian Capital Market, Manufacturing Firms

1. INTRODUCTION

A number of empirical studies (Atje&Jovanovic, 1993; Levine &Zervos, 1996, 1998; Rousseau &Wachtel, 2000; Beck & Levine, 2002) have shown the importance of capital market development in the growth process of the developed countries of the world. These studies which focus on the

finance-growth link show that industries and firms located in economies with well-developed capital markets have grown faster than those located in economies with weak capital markets. The study of Demirguc-Kunt and Levine (1996) using data from 41 countries for the period 1986 – 2003 shows that the three most developed capital markets are in the United States, United Kingdom and in Japan. They also find that the most underdeveloped markets are in Columbia, Nigeria, Venezuela and Zimbabwe. These countries with the most developed capital markets are also the most developed countries in the world.

The Nigerian capital market came into formal existence through the establishment of the Nigerian Stock Exchange in 1961 primarily to provide the machinery for mobilizing private and public savings and making them available for productive investment through stocks and shares (Onyido, 1994). The use of the capital market reduces over-reliance on the money market, assists in promoting a solvent and competitive financial sector as well as fostering a healthy stock market culture (Ojo, 1998). An efficient capital market mobilizes savings and allocates a greater proportion to those companies with the highest prospective rates of return after giving due allowance for risk. This allocative function is critical in determining the overall growth of the economy. If capital resources are not provided for those economic areas, especially industries where demand is growing and which are capable of increasing production and productivity, the rate of expansion of the economy inevitably suffers (NSE Factbook, 2009).

The fact that the Nigerian capital market has made some modest contributions to the growth of the economy has been attested to by several authors (Alile&Anao, 1986; Onyido, 1994; Ojo, 1998; Ekineh, 2003; Elakama, 2004; Aguwamba, 2005; Ariyo&Adelegan, 2006; Ndanusa, 2006; Okereke-Onyiuke, 2006; Ezenwe, 2006; Oladele, 2007 and Ibru, 2009). They acknowledge that the involvement of the Nigerian Stock Exchange in the privatization exercise increased the volume of activities and hence the absorptive capacity, and also that the few listed companies provide over 85% of all corporate taxes in Nigeria. However, they all agree that the market is still very small when compared with the size of the economy. Other authors like Ayagi (2006), Adedipe (2006), Oluwatosin, Adekanye and Yusuf (2013) and Okonkwo, Ogwuru and Ajudua (2014) insist that the Nigerian capital market has not been able to mobilize substantial capital for real sector growth and development.

The manufacturing sector has been playing a major role in the economic growth and development of many countries and this link can be seen directly in the way manufacturing contributes to the Gross Domestic Product (GDP) through its output of goods. In most advanced countries, high overall growth has been positively associated with the share of manufacturing

activity. The sector is dynamic, offering opportunity for wealth creation and employment generation. Also growth in the manufacturing sector enables growth in other sectors, and as a result creates more jobs and investment. Thus, developing or underdeveloped countries can substantially improve their relative position by accelerating growth through increase in the rate of investment in manufacturing.

Manufacturing industries are generally involved in the production of goods and so require capital goods or fixed assets which include land, buildings, plants, machines and equipment, to add value to raw materials. All these require funds – specifically long-term funds, because of the long gestation period of industrial production which the capital market is best suited to provide. Thus, the need for a developing country like Nigeria to increase its capacity to mobilize funds effectively and allocate them efficiently in order to achieve high levels of industrialization cannot be over-emphasized.

Although a large volume of literature exists on the role of capital markets, majority of these studies have been conducted at the macroeconomic level using aggregate macroeconomic data. Most of these studies found a positive relationship between capital market development and economic growth. A number of studies (Mieno, 2006; Liu & Hsu, 2006 and Hussain, 2011) have examined the relationship between capital markets and the industrial sector to see if the relationship existing at the macro-level can be corroborated with industry-level data. Mieno (2006) and Hussain (2011) specifically examined the relationship between capital markets and the manufacturing sector in various countries and found a positive relationship. In Nigeria Obiakor and Okwu (2011) and Okoye, Nwisienyi and Eze (2013) also found a positive relationship between the capital market and industrial output.

Other studies have started to focus attention using firm-level data at the firm level. As earlier noted with industry-level studies, these studies were also carried out to determine the nature of the relationship between capital markets and the manufacturing sector using firm-level data. For example, Ganesh-Kumar, Sen and Vaidya (2002), Giannetti, Guiso, Japelli, Padula, and Pagano (2002), Liu and Hsu (2006) and Hussain (2011) used firm-level data of listed manufacturing companies to examine the impact of capital market on the performance of the companies. These studies found positive relationships using firm-level data.

From the foregoing, and despite the positive relationship recorded by various authors, the researcher did not come across studies using firm-level data to examine the relationship or impact of the Nigerian capital market in the channeling of funds to the manufacturing sector. The question is to what extent has the Nigerian capital market been able to carry out its financial intermediation role with reference to the manufacturing sector? The specific objectives are to determine the extent to which the Nigerian capital market has

been able to mobilize and efficiently allocate funds to the manufacturing firms. Therefore, this present study is aimed at making major contributions to knowledge by examining the financial intermediation role of the Nigerian capital market and the performance of listed manufacturing companies using firm-level data. The findings would be beneficial for capital market development policy in Nigeria.

2. CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Conceptual Framework

The financial system in any country is made up of two major markets – the money and capital markets. While the money market is for trading short-term instruments, the capital market is the medium and long-term end of the financial market. However, for a balanced development of the financial system, there is the need for both markets to be complementary.

The capital market is made up of institutions that facilitate the issuance and secondary trading of medium and long-term financial instruments. Unlike the money market, which functions basically to provide short-term funds, the capital market provides funds to industries and governments to meet their medium and long-term capital requirements, such as financing of fixed investment – buildings, plants, machinery and bridges. Therefore the capital market plays a very vital role in stimulating industrial as well as economic growth and development. In the absence of a capital market, industrial growth would be hampered, as the money market is not designed to provide such funds.

The capital market is divided into two segments – the primary market and the secondary market. The primary market is for raising funds through the issuance of new securities, while the secondary market segment provides facilities for trading in already issued securities. In the primary market, the funds raised from investors go to the issuing entity, while in the secondary market the proceeds from the transactions go to the investors. The two levels of the market complement each other as the success of the new issues depends to a large extent on the favourable response in the secondary market and also on the level of liquidity in the secondary market. The availability of a liquid secondary market is a very important aspect of the capital market, as investors are more willing to place their funds in the primary market if they know that their holdings are easily convertible to cash.

A security that is illiquid or unpopular in the secondary market may indicate lack of investors' confidence in the company's financial performance. As a result, investors are unlikely to be attracted when new issues of that company are offered for sale in the primary market. The flexibility and the lowering of risks that a liquid secondary market offers investors, ensures the

deepening of the primary market. This enables investors to switch between investments and, by so doing, allows the capital market to allocate resources more efficiently. This aspect of the market has been identified as a critical element in determining the efficiency of the economy.

The financial intermediation role of capital markets involves the mobilization and allocation of capital. Capital mobilization refers to obtaining and pooling of funds from savers or surplus units such as individuals, households and business firms and making these funds available to users or deficit units who are mainly businesses and government. The degree to which the capital market is able to achieve this depends on how efficient the market is, which in turn depends on the level of development of the market.

Capital allocation refers to the channeling of the mobilized funds to those areas where the best returns can be realized. The capital market provides the mechanism by which the nation's financial resources are mobilized and allocated to those industries and companies that will make the best use of them. The capital market through the stock exchange provides the avenue to organize securities trading by bringing buyers and sellers together. Through its competitive pricing mechanism, investors will invest in those stocks which are seen to be promising and where they would obtain high returns at low risk, and liquidate their holdings in those stocks which they perceive to be overvalued. However, for this to occur, stock prices must incorporate firm-specific information for efficient allocation. The interaction of the participants - the buyers and sellers - allow for the determination of the price of the traded securities in the capital market based on the demand and supply. Through this price discovery mechanism, the generation and consequent dissemination of information to the various segments of the market is realized. It is this fundamental role of prices in aggregating information in stock markets that help to allocate resources efficiently, as funds will then flow to those firms with promising returns. Thus in the financing channel, prices enable good firms to raise funds more cheaply as the prices act as signals to investors or lenders of the potential of the company in which they wish to invest.

The efficiency of the capital market thus depends on the extent or degree to which it is able to provide adequate information to guide investors on where to channel their resources. This can be seen in how efficiently the stock prices in the market impound firm-specific information.

Review of Related Literature

Capital markets provide the mechanism for intermediation over the long term between financial surplus units and financial deficit units. The capital market mobilizes the funds in the hands of savers (investors) and channels same to the users (firms) through the mechanism of the stock exchange which provides the platform for bringing them together. By this they

form the channel for the flow of financial resources among the economic sectors. The extent to which the capital market can intermediate between surplus and deficit units depends on the level of development of the financial sector as well as the savings habit of the populace. Gurley and Shaw (1955) pointed out that one of the major differences between the developed countries and the less developed ones is the attainment of a higher level of financial system development in developed countries.

A number of empirical studies (King & Levine, 1993; Levine &Zervos, 1996; Levine &Zervos, 1998 and Beck, Levine &Loayza, 2000) have shown that most developed countries have well-developed financial systems and their capital markets have been able to mobilize domestic savings and allocate them efficiently to the real sector. Arestis, Denetriades and Luintel (2001) analyzed data for Germany, the United States, Japan, France, and the United Kingdom covering a period of 25 years. Similarly, Vazakidis and Adamopoulos (2009) analyzed data for France for the period 1965 to 2007. These results indicate that these countries have been able to mobilize capital effectively for the development of their economies. In some less developed countries, capital markets have been shown to mobilize domestic savings and allocate funds efficiently. Shabaz, Ahmed and Ali (2008), using time series data from 1971 to 2006, showed that Pakistan has been able to mobilize capital for real sector investment. Anwar, Shabir and Hussain (2011) similarly showed that Pakistan has also been able to effectively mobilize capital via its capital market for its economic development.

Levine and Zervos (1998) examined the link between capital market development and economic growth. They employed data from 47 countries from 1976 to 1993. They used stock market liquidity (measured as turnover of shares and value traded), size (market capitalization), volatility (twelve months rolling standard deviation), integration with world markets and bank credit for private sector (bank credit to the private sector to GDP) as predictors of economic growth, capital accumulation, improvement in productivity, and savings growth rates. They found that stock market liquidity is strongly correlated to the rate of economic growth. They however, show that capital market size, volatility and international integration are not robustly linked with growth.

Mishra, Mishra, Mishra and Mishra (2010) examined the impact of capital market efficiency on the economic growth of India using time series data on market capitalization, total market turnover and stock price index over the period spanning from the first quarter of 1991 to the first quarter of 2010. Their study revealed that there is a linkage between capital market efficiency and economic growth in India.

Havranek, Horvath and Valickova (2013) analyzed 67 studies and found that capital markets support faster economic growth than other financial

intermediaries, but that the effect seemed weaker in poor countries. Hailemariam and Guotai (2014) using data for 17 emerging markets and 10 developed market economies from 2000 to 2011, found that the capital markets have been able to effectively mobilize capital for economic growth.

A few studies have also been carried out in Africa. Agarwal (2001) using simple correlation analysis on 9 African countries from 1992 to 1997 found that capital market development is correlated with investment and in turn with economic growth. He noted however, that the results obtained suggest that value of shares traded ratio (TR) is not an effective measure of stock market liquidity. He explained that this may be especially so in the context of African countries where stock markets are highly volatile, causing the turnover ratio to be a misleading indicator of liquidity. Adjasi and Biekpe (2006) from their study of 14 African countries found that positive influence of stock market development on economic growth is significant for countries classified as upper middle-income economies. SimilarlyNzue (2006), using data for Ivory Coast found that there is a unidirectional causality running from capital market development to economic growth. Yartey and Adjasi (2007) examined the economic importance of capital markets in Africa and they found out that capital markets have contributed to the financing of large corporations in certain African countries, specifically, South Africa, Ghana, Zimbabwe and Mauritius. They used 3 capital market indicators- market capitalization relative to GDP, value of shares traded relative to GDP, and the turnover ratio (value traded/ market capitalization). The modeling and estimation follow the framework of Levine and Zervos (1998). The macroeconomic variables include GDP, investment (gross domestic fixed capital formation as proxy) and trade openness (sum of exports and imports relative to GDP). The three capital market indicators enter the model separately in order to determine which indicator is the best channel through which stock markets influence growth. The analysis failed to show conclusive evidence on the impact of capital markets on growth, even though market value traded seemed to be positively and significantly associated with growth.

A number of scholars in Nigeria have undertaken empirical studies and have also recorded positive relationship. These include Nwokoma (2002 and 2006), Osinubi (2004), Nwaogwugwu (2008) and Akinlo (2008). Whereas Nwokoma and Nwaogwugwu revealed that there is a strong feedback relationship between capital market variables and industrial output and economic growth in Nigeria, Akinlo found unidirectional causality running from GDP (economic growth) to capital market capitalization. The difference in results may be due to the different methods and time periods used. For exampleAkinlo worked with data covering 1980 to 2006, while Nwaogwugwu covered the period 1989-2007. The difference notwithstanding, they all

stressed on the need for a deliberate effort at boosting economic activities as this will have a positive effect on the development of the capital market.

More recent studies in Nigeria such as Okpara (2010), Okafor and Arowoshegbe (2011), Josiah, Adediran, Ogungbenle and Akpeti (2012), Oluwatosin et al. (2013), Odita and Oghoghomeh (2013) and Okonkwo, Ogwuru and Ajudua (2014) found that the capital market has a positive but insignificant impact on real sector growth. They noted however that the capital market has great potential to impact the economy more than it has done. However, Okoye and Nwisienyi (2013) reported that the capital market has impacted significantly on the Nigerian economy. These conflicting conclusions may be as result of the differing time periods in which the studies were carried out.

Ariyo and Adelegan (2006) looked at the effects of policy reforms on capital market development and surmised that the liberalization of capital markets enhanced their ability to mobilize funds. Through liberalization certain impediments to funds mobilization are removed

A number of challenges have been found to confront African capital markets in their effort to mobilize domestic resources and attract foreign capital. Khamfula (2005) identified challenges such as finding a way to increase the supply of securities in the markets, increasing returns to shareholders and liquidity of shares in the market and making firms go public. Mala and White (2006) reported that for many other developing countries, however, the equity markets until the mid-1980s generally suffered from the classical defects of bank-dominated economies, that is, shortage of equity capital, lack of liquidity, absence of foreign institutional investors and lack of investor confidence in the stock market. Another challenge identified is that most of Africa's equity markets have inadequate government regulation and inefficient private information gathering and disseminating firms compared to the more developed stock markets in developed countries (Yartey and Adjasi, 2007). Other impediments to capital market development such as legal, regulatory and tax barriers have also been identified. Khamfula (2005) pointed out that as a result the legal and regulatory environment lacks the required operational ingredients such as accepted standards of accounting and the disclosure of information.

Igbatayo (2011) highlighted the effect of the global financial crisis of 2008 to 2010, and pointed out that the resulting loss of confidence and financial contagion greatly limited the ability of the global capital markets, including the Nigerian capital market to mobilize funds. Okoye et al. (2013) indicated that capital mobilization has been severely limited by adverse economic environment such as poor economic infrastructures, bureaucratic bottlenecks, corruption and poor corporate governance, regulatory and supervisory frameworks. Recent reports of transactions in the market indicate

that investors are yet to recover from the crisis and this has greatly affected the ability to mobilize capital from the market. This has also been compounded by the recent drop in oil prices and the exiting of foreign investors as a result of declining foreign exchange rates. Added to these is the lingering insecurity in the country as a result of terrorism and insurgency.

It can be seen that in general, the level of development of a capital market and how it is organized and regulated have much to do in terms of its ability to effectively and efficiently mobilize capital for economic development. While the level of development of a country may determine the level of development of its capital market, some emerging economies have relatively well-developed capital markets and so there is no reason why Nigeria cannot have a more developed and efficient capital market.

3. METHODOLOGY

Data

In order to examine the relationships between the capital market functions and the performance of the manufacturing sector, 13 manufacturing firms from several industrial sectors and with consistent results were selected for a preliminary study covering a 10-year period from 2002-2011. The companies were from industrial sectors which included agriculture/agro-allied, breweries, building materials, food/ beverages and tobacco among others.

The study employed a multiple regression model using panel data and analyzed with the ordinary least squares technique. Data were put in panel form because they were both cross-sectional and times series in nature. Panel data estimation technique provides more variability and less co-linearity among variables and takes care of the problem of heterogeneity among variables (Gujarati and Sangeetha, 2007). Secondary data used for the analysis were obtained from the financial statements of the selected companies, the Nigerian Stock Exchange Factbook for the relevant years and the Statistical bulletins of the Securities and Exchange Commission.

Model Specification

Following a review of previous studies, the model adopted for this study is based on the models of Levine and Zervos (1998), Hussain (2011) and Ewah, Esang and Bassey (2009) and modified to achieve the objectives of this study. Thus, firm performance is expressed as a function of capital market intermediation. In principle, we expect a positive relationship between firm performance and the various proxies of capital market intermediation if indeed the capital market has been channeling funds to the manufacturing firms.

The study employs return on equity (ROE) as the dependent variable and measure of firm financial performance. ROE is chosen because it is an

important accounting-based and widely used and accepted measure of firm performance. The general form of our firm's performance model is as follows:

Firm Performance = F (Capital market intermediation)(1)

The general model for this study using panel data analysis is in the following form:

$$Perf = \beta_0 + \beta_1 X_{it} + \beta_2 Z_t + \varepsilon_{it} \quad (2)$$

Where Perf indicates firm performance and subscript *i* specifies cross section dimension (firms) and *t* specifies time dimensions of the data set. β_0, β_1, and β_2 are unknown constants. X_{it} represents the set of firm-specific explanatory variables which vary across firms as well as over time. $Z_t$is institutional (capital market) explanatory variable that vary over time only, which in this study is the allocation efficiency and also information efficiency of the capital market. ε_{it} is the composite error term comprising of firm-specific component, time-specific component and a component varying over time and across firms.

Specifically, when the above model is adopted, equation (2) can be written as:

$$ROE_{it} = \beta_0 + \beta_1 SCAP_{it} + \beta_2 MCAP_{it} + \beta_3 TOR_t + \varepsilon_{it} (3)$$

Where:
ROE_{it} = Return on Equity of firm i in period t. It is proxy for firm performance
$SCAP_{it}$ = Share capital of firm i in period t. It is proxy for capital raised at firm level
$MCAP_{it}$ = Market capitalization of firm i in period t. It is a proxy for supply of funds to firms.
TOR_t = Turnover ratio in period t. It is a proxy for capital market efficiency in terms of information provision and allocation efficiency.
ε_{it} = Composite error term
β_o = Constant term (intercept)
β_1, β_2, β_3, and are the coefficients to be estimated.
i= 1,2, ,..., 13
t = 1,2, ..., 10
The model is further transformed to a log model as follows:

$$ROE_{it} = \beta_0 + \beta_1 LNSCAP_{it} + \beta_2 LNMCAP_{it} + \beta_3 LNTOR_t + \varepsilon_{it} (4)$$

The objective is to improve the validity of the estimates and conclusions based on them. This is in line with Ekpo (1997) and Uremadu and Efobi (2012) that the use of log-transformed equations aim at reducing , if not completely removing heteroscedasticity, which may result from unscaled magnitudes on both sides of the equation.

From theoretical expositions and conventions, each model parameter estimate is expected to have a positive sign. Thus, a priori expectations from the model were as follows:

β_1, β_2, and $\beta_3 > 0$. The model specified was estimated using the statistical software STATA 12.0. The model was used to test the following hypotheses at the 5% level of significance;

Hypothesis 1: There is no significant relationship between the funds raised by the manufacturing firms in the capital market and their performance.

Hypothesis 2: There is no significant relationship between the funds supplied to the manufacturing firms and their performance.

Hypothesis 3: There is no significant relationship between the capital market allocation function and firm performance.

4. RESULTS AND DISCUSSIONS

The result of the panel regression is summarized in table 1.

Table 1: Summary Regression Result

	Expected Sign	Actual Sign	Pooled Coefficient	P-value
ΔSCAP	+	-	-15.58	0.000**
ΔMKTCAP	+	+	12.48	0.000**
ΔTOR	+	-	-2.49	0.711
Constant			30.13	0.324
R^2			0.2506	
Adj. R^2			0.2327	
N			130	
F test				0.000**

Dependent Variable: ROE. Note: * ** show significance at 5% and 1% respectively
Source: STATA 12.0 output

Based on the output of STATA 12.0, the relationship between firm performance (ROE) and the explanatory variables can be determined by the equation:

$$ROE_{it} = 30.13 - 15.58SCAP_{it} + 12.48MCAP_{it} - 2.49TOR_t$$

The p-value (0.000) of the F statistic for the model is significant. This shows that the regression model is valid and the data fitted the model well. The coefficient of determination, R^2 is 25.06%. This means that 25.08% change (variance) in the dependent variable can be explained by the independent variables in the model. Thus other factors not included in the model accounted for the remaining variance in the performance of the firms.

For hypothesis 1 at 5% significance level, the coefficient for share capital (SCAP) is negative and significant (p-value less than 0.05) contrary to the a priori expectation, which is that the coefficient be positive. Thus, the hypothesis that there is no significant relationship between the funds mobilized by the manufacturing firms and their performance is rejected, which leads us to accept the alternative that there is a negative and significant relationship between the funds mobilized and the performance of the manufacturing firms. The negative relationship between share capital which is the proxy for funds raised, and firm performance indicates that the firms did not access fresh funds from the primary market during the period under study. Using a micro-level approach with firm-level data, the results from the first hypothesis agree with those of Okafor and Arowoshegbe (2011), who using industrial level data, found that gross capital formation in Nigeria is not financed significantly by the capital market. It also agrees with Ariyo and Adelegan (2006), Ewah et al. (2009), Ojo and Adeusi (2012) and Maduka and Onwuka (2013) who also found that the Nigerian capital market has not contributed meaningfully to the Nigerian economy.

In the second hypothesis the relationship between market capitalization (MCAP) and firm performance is positive and significant (p-value less than 0.05). We reject the null hypothesis that there is no significant relationship between the funds supplied to the manufacturing firms and firm performance and accept the alternative that there is a significant relationship between funds supplied to the manufacturing firms and their performance. This shows the potential of the capital market to mobilize and channel funds to the manufacturing firms as it indicates the willingness of investors to supply funds to the firms. Again, although this study was carried out with firm-level indicators, the results agree with those of Nwokoma (2002, 2006), Akinlo (2008) and Nwaogwugwu (2008), who found positive relationship between the Nigerian capital market and industrial output. These findings from the first two hypotheses using firm-level data have shown that although the Nigerian capital market has the potential to mobilize funds from the economy, it has not translated into fresh capital for manufacturing firms. The Nigerian capital market has demonstrated that it has the potential to mobilize and channel fresh funds to the manufacturing sector, even though the firms have not made use of the opportunities available in the capital market.

In the third hypothesis the coefficient for turnover ratio (TOR) which is proxy for both allocation and information efficiency is negative and insignificant (p-value is more than 0.05). Therefore the null hypothesis is upheld. We accept the hypothesis that there is no significant relationship between capital market allocation efficiency and manufacturing firm performance. This indicates that the Nigerian capital market has not been efficient in the allocation of funds to the manufacturing firms and also indicates the lack of liquidity in the market which signals inefficient information provision. This result agrees with the findings of Olowe (1996), Okafor and Arowoshegbe (2011) and Nneji (2013) who attribute this to the low level of development of the Nigerian capital market.

5. CONCLUDING REMARKS

From the findings, this research work using firm-level data has provided evidence that although the Nigerian capital market showed the potential to mobilize funds for the manufacturing sector; this did not translate into capital formation as firms did not make use of the market to source for funds during the period under study. We can safely conclude that the Nigerian capital market has not impacted positively on the ailing economy by providing the much needed funds to the manufacturing sector which has the greatest potential to impact the economic development of any nation. The low level of development as demonstrated by the low level of liquidity in the market is responsible for this state of affairs. There is therefore the need to critically look into the activities and operations of the capital market to identify any restrictions or constraints hindering entrepreneurs and firms from accessing funds from the capital market which is not only a cheaper source of funds when compared to the money market, but is also a permanent source of funds.

To encourage capital market development and make it more accessible and attractive to investors and entrepreneurs, policy makers should as a matter of urgency take a number of steps so as to take full advantage of the potential of the market to mobilize and also efficiently channel long-term funds for the development of the ailing economy through the provision of funds for the manufacturing sector. First, all identified impediments to accessing the capital market both from the supply side and the demand side should be removed. From the supply side, constraints faced by investors especially in the receipt of dividends, ease of transacting in the market, signature verification, certificate dematerialization, among others should be addressed so as to make investing in the market more attractive. On the demand side, there is need for the relaxation of the stringent requirements of the Nigerian Stock Exchange so as to enable indigenous companies to get listed and consequently raise fresh funds from the market when the need arises.

The Nigerian Stock Exchange as well as the Securities and Exchange Commission should create more awareness and educate the public on the opportunities available to entrepreneurs in the capital market. A conscious effort should be made to periodically organize road shows specifically targeted at the manufacturers, possibly through the Manufacturers' Association of Nigeria (MAN) as was the case during the Bank consolidation exercise of 2004/2005 under the leadership of the then Director-General of the NSE, Professor NdiOkereke-Onyiuke. Also, the public should be educated on the benefits of investing in the country rather than investing in other countries thereby boosting those economies to the detriment of our economy.

There is the need for the NSE to ensure that firms which are already listed be more responsible by living up to the expectation of investors who part with their hard-earned money, by way of paying dividends as and when due. This is very important as the impression of many investors is that the promoters of many of the firms engage in abuse of office and sharp practices, and divert a good percentage of their profits, instead of making same available to be appropriated as dividends to investors.

Lastly, and most importantly, Government should ensure macroeconomic stability and provide the infrastructure necessary to stimulate investment and production, most especially adequate power supply, as this singular factor will go a long way in improving the investment climate of the country.

REFERENCES

Adedipe, A. (2006). Mainstreaming the capital market in national policy formulation. In M. Al-Faki, &Akele, S. O. (Eds.) *Mainstreaming the Capital Market in National Policy Formulation and Management-Proceedings of the Second Annual National Capital Market Conference.* (pp 43-57). Securities and Exchange Commission.

Adjasi, C. K. D., &Biekpe, N. B. (2006). Stock market development and economic growth: The case of selected African countries. *African Development Review,18*(1), 144-161.

Agarwal, S. (2001). Stock market development and economic growth: Preliminary evidence from African countries. Retrieved from www.jsd.africa.comAkinlo, A. E. (2008). Stock market development and economic growth in Nigeria: Co- integration and co-feature analysis. *Nigerian Journal of Securities and Finance, 13* (1), 71-90.

Alile, H. I., &Anao, R. A. (1986). *The Nigerian Stock Market in Operation.* Lagos, Jeromelaiho and Associates Ltd.

Aguwamba, S. M. (2005). Role of Nigerian Stock Exchange in the provision of capital for Nigerian industrial development. *The Nigerian Banker*, April-June, 33-38.

Anwar, S., Shabir, G., & Hussain, Z. (2011). Relationship between financial sector development and sustainable economic development: Time series analysis from Pakistan. *International Journal of Economics and Finance,3*(1), 262-270.

Arestis, P., Demetriades, P., &Luintel, K. (2001). Financial development and economic growth: The role of stock markets. *Journal of Money, Credit and Banking*, *33*(1), 16-41.

Ariyo, A., &Adelegan, O. (2006). Assessing the impact of capital market reforms in Nigeria: An incremental approach. *In The Nigerian Economic Society. Costs and Benefits ofEconomic Reforms in Nigeria.* Pp 559-595.

Atje, R., &Jovanovic, B. (1993). Stock markets and development. *European Economic Review*, *37*, 632-640.

Ayagi, I. (2006). Capital shortage, capital formation and the capital market. In M. Al-Faki. And S. O. Akele, (Eds.). *Mainstreaming the Capital Market in National Policy Formulation and Management-Proceedings of the Second Annual National Capital Market Conference*. (pp 58-68). Securities and Exchange Commission.

Beck, T. & Levine, R. (2002). Stock markets, banks and growth: Panel evidence. *NBER Working Paper 9082*, Cambridge, 1-23.

Beck, T., Levine, R., &Loayza, N. (2000). Finance and sources of growth. *Journal of Financial Economics*, *58*, 261-300.

Dermirguc-Kunt, A., & Levine, R. (1996). Stock markets, corporate finance and economic growth: An overview. *World Bank Economic Review*, *10*(2), 223-239.

Ekineh, D. (2003). Deepening the Nigerian capital market: Regulatory, supervisory and operational imperatives in a global financial environment. In S. A.Ndanusa& U. Ezenwe (Eds.). *Nigerian Capital Market and the Globalization Challenges-Proceedings of the First Annual National Capital Market Conference* (pp 1-8). Securities and Exchange Commission.

Ekpo, A. H. (1997). Foreign direct investment in Nigeria: Evidence from time series data. *CBN Economic and Financial Review*, *35* (1)

Elakama, L. M. (2004). Overview of the Nigerian Stock Exchange: Operations and the Nigerian financial system. *The Nigerian Stockbroker*. October-December, pp 14-24.

Ewah, S. O. E., Esang, A. E., &Bassey, J. U. (2009). Appraisal of capital market efficiency on economic growth in Nigeria. *International Journal of Business and Management*. *4*(12), 219-228.

Ezenwe , U. (2006*). An overview of the Nigerian capital market*. Paper presented at the
workshop on "Understanding Capital Markets Laws, Ethics and Corporate Governance for Business Executives" on 20th June2006 at SEC Lagos Zonal Office.

Ganesh-Kumar, A., Sen, K., & Vaidya, R. R. (2002). Does the source of financing matter?: Financial markets, financial intermediaries and investment in India. *Journal of InternationalDevelopment*, *14*, 211-228.

Giannetti, M., Guiso, L., Japelli, T., Padula, M., & Pagano, M. (2002). Financial market integration, corporate financing and economic growth. *European Commission Economic Papers*No 179.

Gujarati, D. N., & Sangeetha (2007). *Basic Econometrics* (4th ed.). New Delhi, Tata McGraw- Hill.

Gurley, J., & Shaw, E. (1955). Financial aspects of economic development. *American Economic Review, 45*, 515-537.

Hailemariam, A., &Guotai, C. (2014). Stock market development and economic growth: Empirical evidence for emerging economies. *International Journal of Economics, Finance and Management Sciences, 2*(2), 171-181.

Havranek, T., Horvath, R., &Valickova, P. (2013). Financial development and economic growth: A meta-analysis. *Working Papers IES 2013/04, Charles University Prague, Faculty of Sciences, Institute of Economic Studies*.

Hussain, I. (2011). Financial development and firm's growth in textile industry of Pakistan: A panel data analysis. *Business Review*. *6*(2), 97-105.

Ibru, G. M. (2009). Making the Nigerian capital market an engine for economic development. *The Nigerian Stockbroker*, Jan-Dec 2009, pp 5-10.

Igbatayo, S. (2011). The challenges of global economic crisis and Nigeria's financial markets' stability. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS), 2*(6), 497-503.

Josiah, M., Adediran, A. S., Ogungbenle, S. K., &Akpeti, O. E. (2012). Capital investment is financed by financial institutions in Nigerian economy. *Research Journal of Business Management, 6*(3), 83-93.

Khamfula, Y. (2005). African capital markets and real sector development. *Journal ofInternational Development.17*, 511-525.

King, R., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *Quarterly Journal of Economics*, *108*(3), 717-737.

Levine, R. &Zervos, S. (1996). Stock market development and long-run growth. *WorldBank Economic Review*, *10*(2), 323-339.

Levine, R., &Zervos, S. (1998). Stock markets and economic growth. *American Economic Review*, *88*, 537-558.

Liu, W.C., & Hsu, C. M. (2006). Financial structure, corporate finance and growth of Taiwan's manufacturing firms. *Review of Pacific Basin Financial Markets and Policies*, *9*(1), 67- 95.

Maduka, A. C., &Onwuka, K. C. (2013). Financial market structure and economic growth: Evidence from Nigeria data. *Asian Economic and Financial Review, 3*(1), 75-98.

Mala, R., & White, M. (2006). Assessment of an emerging stock market. *International Research Journal of Finance and Economics,6*, 116-132.

Mieno, F. (2006). Fund mobilization and investment behaviour in Thai manufacturing firms in early 1990s. *Asian Economic Journal. 20*(1), 95-122.

Mishra, P. K., Mishra, U. S., Mishra, B. R.,& Mishra, P. (2010). Capital market efficiency and economic growth: The case of India. *European Journal of Economics, Finance and Administrative Sciences. 27*, 130-138.

Ndanusa, S. A. (2006). The centality of paradigm shift in a development process. In M. Al-Faki& S. O. Akele (Eds.*). Mainstreaming the Capital Market in National Policy Formulation and Management-Proceedings of the Second Annual National CapitalMarket Conference*. (pp 1-14). Securities and Exchange Commission.

Nigerian Stock Exchange (2009). *Factbook*. Nigerian Stock Exchange, Lagos.

Nneji, I. (2013). Efficiency of the Nigerian capital market: An empirical analysis. *Research Journal of Finance and Accounting, 4*(4), 69-77.

Nwaogwugwu, I. C. (2008). Stock market development and economic growth in Nigeria: The causal linkage. *Nigerian Journal of Securities and Finance*, *13*(1), 115-128.

Nwokoma, N. I. (2002). Stock market performance and macroeconomic indicators nexus in Nigeria: An empirical investigation. *The Nigerian Journal of Economic and Social Studies*, *44*(21), 231-251.

Nwokoma, N. I. (2006). Output growth and stock market development nexus in Nigeria: An empirical analysis. *The Nigerian Journal of Economic and Social Studies,48*(1), 83-102.

Nzue, F. F. (2006). Stock market development and economic growth: Evidence from Cote D'Ivoire. *African Development Review*, *18*(1), 123-143.

Obiakor, R. T., &Okwu, A. T. (2011). Empirical analysis of impact of capital market development on Nigeria's economic growth (1981-2008) (Case Study: Nigerian Stock Exchange*). DLSU Business and Economic Review*, *20*(2), 79-96.

Odita, A., &Oghoghomeh, T. (2013). Modelling the effect of capital market: Empirical evidence from Nigeria. *Research Journal of Finance and Accounting, 4*(12), 81-89.

Okoye, O. V., &Nwisienyi, K. J. (2013). The capital market contributions towards economic growth and development: The Nigerian experience. *Global Advanced ResearchJournal of Management and Business Studies, 2*(2), 120-125.

Okoye, O. V., Nwisienyi, J. K., &Eze, O. R. (2013). Capital market and industrial sector development in Nigeria: A theoretical analysis. *Journal of Emerging Trends in Economics andManagement Sciences (JETEMS), 4*(1), 20-30.

Ojo, M. O. (1998). Developing Nigerian industrial capabilities through public quotations as a key for sustainable economic growth. *CBN Bullion, 22*(3), 5-13.

Ojo, M. O., &Adeusi, S. O. (2012). Impact of capital market reforms on economic growth: The Nigerian experience. *Australian Journal of Business and Management Research,2*(2), 20-30.

Okafor, C. &Arowoshegbe, A. O. (2011). Stimulating economic development through the capital market: The Nigerian experience. *JORIND, 9*(2), 404-412.

Okereke-Onyiuke, N. (2006). Enhancing the growth of the capital market through Federal Government initiatives. In M. Al-Faki.& S. O. Akele, (Eds.). *Mainstreaming the Capital Market in National Policy Formulation and Management- Proceedings of the Second Annual National Capital Market Conference* (pp 69-78) Securities and Exchange Commission.

Okonkwo, O. N., Ogwuru, H. O., &Ajudua, E. I. (2014). Stock market performance and economic growth in Nigeria: An empirical appraisal. *European Journal of Business and Management, 6*(26), 33-42.

Okpara, G. C. (2010). Analysis of capital market performance and the growth of the Nigerian economy: A co-integration approach. *Global Journal of Human Social Science, 10*(4), 9- 15.

Oladele, O. K. (2007). The role of the Nigerian Stock Exchange in the valuation of the equities of privatized and commercialized public enterprises, 1988-2003. *The Nigerian Journal of Management Research, 4*(1), 89-118.

Olowe, R.A. (1996).Semi-Strong Information Efficiency of the Nigerian Stock Market: Evidencefrom Stock Splits. *Unpublished PhD Thesis in the Department of Finance*, University of Lagos, Lagos, Nigeria.

Oluwatosin, E. O., Adekanye, T., &Yusuf, S. A. (2013). Empirical analysis of the impact of capital market efficiency on economic growth and

development in Nigeria*International Journal of Academic Research in Economics and Management Sciences.2*(6), 44-53.

Onyido, B. C. (1994). The Nigerian financial Markets. *CBN Bullion. 18*(2), 20-32.

Osinubi, T. S. (2004). Does stock market promote economic growth in Nigeria? *The ICFAI Journal of Applied Finance*, *10*(3), 17-35.

Rousseau, P., &Wachtel, P. (2000). Equity markets and growth: Cross-country evidence on timing and outcomes, 1980-1995. *Journal of Business and Finance*, *24*, 1933-1957.

Shahbaz, M.., Ahmed, N., & Ali, L. (2008). Stock market development and economic growth: Ardl causality in Pakistan. http://www.eurojournals.com/finance.htm (Retrieved January 6, 2010).

Uremadu, S. O., &Efobi, R. U. (2012). The impact of capital structure and liquidity on corporate returns in Nigeria: Evidence from manufacturing firms. *International Journalof Academic Research in Accounting, Finance and Management Sciences.2*(3), 1-16.

Vazakidis, A., &Adamopoulos, A. (2009). Stock market development and economic growth. *American Journal of Applied Sciences*, *6*(11), 1933-1941.

Yartey, C. A., &Adjasi, C. K. (2007). Stock market development in sub-Saharan Africa: Critical issues and challenges. *IMF Working Paper*

APPENDIX 1

Sample of Manufacturing Firms used in the Preliminary Study

S/No	Company
1	Okomu Oil Plc
2	Presco Oil Plc
3	Guinness Nigeria Plc
4	Nigerian Breweries Plc
5	Ashaka Cement Plc
6	Chemical and Allied Products Plc
7	PZ Cussons Nigeria Plc
8	Flour Mills of Nigeria Plc
9	Nestle Nigeria Plc
10	Nigeria Enamelware Plc
11	Vitafoam Nigeria Plc
12	Avon Crowncaps
13	Beta Glass

Source: Nigerian Stock Exchange Factbook (2013)

DETERMINANT OF FOREIGN DIRECT INVESTMENT IN NIGERIA, (1985 – 2013)

Adekunle, T. Ahmed[1], Olugbenga. A Adetola[2]

[1]Department of Finance, University of Ilorin, Nigeria
[2]Department of Banking and Finance, YABATECH, Nigeria

E-mail:
tobiahamed@yahoo.com
adetolaolugbenga@yahoo.com

ABSTRACT

Most countries strive to attract foreign direct investment (FDI) because of its perceived advantages as a tool of economic development. Nigeria joined the rest of the world in seeking FDI as evidenced by the formation of the Industrial Development Coordination Commitee (IDCC), which has the attraction of foreign investment to Nigeria as a major component. The main objective of this study is to investigate the determinant of foreign direct investment in Nigeria from 1985 to 2015. The study employed secondary data, which was obtained from Central Bank of Nigeria (CBN) statistical bulletin (2013), IMF financial report (2013) and World Bank Data base. The data obtained were subjected to Units root test, Johansen Co-integration test and Error correction method. Essentially, the variables in the model have a long-run disequilibrium by 111% as suggested by the (ECM). It was discovered that market size (GDP) and openness impacted positively on FDI flow while inflation , exchange rate, and infrastructure (electricity consumption by mega watt/hour) development were unfavourable. It is recommended that improvement in infrastructure development and technological development through knowledge spillover, sound monetary and fiscal policy management, maintaining a conducive political and social environment for development will go along way in attracting FDI to Nigeria. The study concluded that the success of FDI in any host country is dependent upon the level of infrastructural facilities,political and social security in terms of lives and property in the country. Without the availability of these needed facilities, it would be risky for investors to come into any country.

1. INTRODUCTION

Foreign Direct Investment (FDI) is the ownership or control of some portion of companies or firms by foreigners in a domestic economy. According to Piana (2005), it consist of acquisition or creation of assets (e.g firm's equity, buildings, oil drilling rigs, etc) and in some cases these companies join together with the government of the domestic economy and termed as joint ventures companies. As obtainable in Nigeria, some factors determine the inflow of capital either in form of financial resources or real capital for investments. These factors could be economical or political and

Nigerian security situation determines largely the aggregate investments in the country.

Since Independence in 1960, FDI has been given prominence in the quest for the growth and sustainable development of Nigeria. According to Udeaja, Udoh and Ebong (2008), Nigeria like other developing countries is trapped in low savings-investment cycle is dependent on foreign capital flows to stimulate economic growth and as oil exporting country has attracted more FDI compared to other Sub-Sahara African (SSA) countries.

According to Dinda (2009), Nigeria dominates the recipient of the FDI to African continent which received 70% of the sub-regional total and 11% of Africa's total and out of this; Nigeria's oil sector alone received 90% between 1970 and 2006. There have been factors which are seen to drive the growth of FDI in Nigeria which over time have not been performing positively, especially the business environments in the oil rich region of the Niger Delta and recently the security threats in the northern region of the country coupled with high cost of production brought about by poor electricity supply and poor transport infrastructure. According to Udeaja (2008), causes of capital flow to domestic economy include improvement in creditor relations, adoptions of sound fiscal and monetary policies and neighbourhood externalities and the presence of natural resources, etc, that offer a strong locational specific advantage in attracting FDI to a host country.

The Nigerian government has been mobilising foreigners to invest in Nigeria but factors like infrastructures, poor financial system, corruption, security challenges, etc, have continued to hamper the growth of the FDI in this country. On the other hand, Nigeria happens to be an oil dependent country which is largely described as an enclave industry, which needs large quantum of FDI for technology transfer, improvement in productivity, efficiency in resource allocation, etc. With the introduction of Structural Adjustment Programme (SAP) in 1986, Nigeria has continued to embark on liberal, regional, bilateral and multi-lateral trade agreements aimed at achieving more Foreign Direct Investments. The SAP programme incorporated trade and exchange rate reforms with monetary and fiscal measures aimed at improving the economy through the discouragement of importation and make export-oriented multinationals gain on their investments (Udeaja, 2008),.

The performances of the major determinants of FDI in this country have not been impressive over time in terms of infrastructures, business environments, price levels and others. This is contrary to the belief that rational investors will only invest in assets with higher rates of returns and less risk. This is in line with the portfolio allocation theory according to Ferderke (2002) which reasoned that FDI flows just like all other capital flows, are

driven principally by rates of return and risk factors with positive correlation with returns and negatively related risks. In
addition, the wave of corruption coupled with the challenges of the major determinants of FDI has given impetus to carry out more studies on FDI in Nigeria.

According to Iyela (2009) corruption increases the cost of doing business and as such foreign investors would prefer to invest in countries with lower rates of corruption which is believed to derive maximum profits from their investments. He added that the insecurity which manifest in kidnappings, hostage taking and deaths of innocent souls automatically discourage FDI. Instead firms will prefer countries with peaceful investment environments.

Studies such as Ayanwale (2007), Adelagan (2000) and Aluko (1969) have concentrated mainly on the impact of FDI on the economy. However, the determinants of FDI need to be analysed and explained and as such, since investment depends largely on the nature of the business environment, this study analyses the determinants of FDI inflow in Nigeria.

Furthermore, given the importance of FDI to developing countries especially African, it is surprising that there is a dearth of research on the factors that affect FDI inflow to Africa. In their studies on the determinants of FDI to Africa, Asiedu (2002), Ajayi (2006), ferderke (2002) and Ayanwale (2007) failed to include electricity consumption by mega watt/hour and inflation among determinant of FDI. The literature is replete with the various estimates and definitions of foreign direct investment, the peculiar factors that determined the Nigerian foreign direct investment can be fully understood from the outcome of this study. This will avail policymakers the opportunity to direct efforts at how to eliminate the challenges in the most effective way possible.

The paper is organized as follows: Section 2 presents a review of the theoretical and empirical literature as well as conceptual issues. Section 3 Methodology and data description 4. Data, estimation and empirical result, conclusion and recommendation of the paper are presented in Section 5.

Nigerian Economy and FDI Trend: An Overview

It is now widely acknowledged that foreign direct investment (FDI) is an important aspect of the recent wave of globalization. UNCTAD (2001) notes that FDI in the world rose from US$57 billion in 1982 to US$1,271 billion in 2000. Even so, only a few countries have been successful in attracting significant FDI flows. Indeed, Africa as a whole – sub-Saharan Africa (SSA) in particular – has not particularly benefited from the FDI boom. For most of the time since 1970, FDI inflows into Africa have increased only modestly, from an annual average of about US$1.9 billion in 1983–87 to US$3.1 billion in 1998–1992 and US$4.6 billion in 1991–1997.

Although UNCTAD's *World Investment Report 2004*, reported that Africa's outlook for FDI is promising, the expected surge is yet to be manifest. FDI is still concentrated in only a few countries for many reasons, ranging from negative image of the region, to poor infrastructure, corruption and foreign exchange shortages, an unfriendly macroeconomic policy environment, among others.

Nigeria is one of the few countries that have consistently benefited from the FDI inflow to Africa as reflected in Table 1. Nigeria's share of FDI inflow to Africa averaged around 10%, from 24.19% in 1990 to a low level of 5.88% in 2001 up to 11.65% in 2002. UNCTAD (2003) showed Nigeria as the continent's second top FDI recipient after Angola in 2001 and 2002.

Table 1: Nigeria: Net foreign direct investment inflow (US$ million)

Year	Africa	Nigeria	Per cent of Africa
1980	392	-188.52	-
1990	2430	588	24.19
1995	5119	1079	21.07
1997	10667	1539	14.43
1998	8928	1051	11.77
1999	12231	1005	8.22
2000	8489	930	10.96
2001	18769	1104	5.88
2002	10998	1281	11.65
2003	15033	1200	7.98

Source: UNCTAD Foreign Direct Investment Database online.

The details of FDI inflow into Nigeria for the period 1970 to 2002 are shown in Table 2. The nominal FDI inflow ranged from N128.6 million in 1970 to N434.1 million in 1985 and N115.952 billion in 2000. This was an increase in real terms from the decline of the 1980s. FDI forms a small percentage of the nation's gross domestic product (GDP), however, making up 2.47% in 1970, -0.81% in 1980, 6.24% in 1989 (the highest) and 3.93% in 2002. On the whole, it formed about 2.1% of the GDP over the whole period of analysis. Prior to the early 1970s, foreign investment played a major role in the Nigerian economy. Until 1972, for example, much of the non-agricultural sector was controlled by large foreign owned trading companies that had a monopoly on the distribution of imported goods. Between 1963 and 1972 an

average of 65% of total capital was in foreign hands (Jerome and Ogunkola, 2004).

Table 2: Foreign direct investment in Nigeria, 1970–2002

Year	**Nominal FDI N million**	**FDI as percentage of GDP**	Real FDI **N million**
1970	128.6	2.47	1,190.70
1971	142.8	2.17	1,142.40
1972	297.8	4.13	2,308.50
1973	186.3	1.69	1,369.90
1974	181.6	0.99	1,179.20
1975	253.0	1.21	1,222.20
1976	212.5	0.79	830.07
1977	245.5	0.77	829.39
1978	134.4	0.38	389.39
1979	184.3	0.43	478.70
1980	-404.1	-0.81	-955.32
1981	334.7	0.66	653.71
1982	290.0	0.56	526.32
1983	264.3	0.46	389.25
1984	360.4	0.57	380.17
1985	434.1	0.60	434.10
1986	735.8	1.02	698.10
1987	2,452.8	2.29	2,112.66
1988	1,718.2	1.20	948.23
1989	13,877.4	6.24	5,088.89
1990	4,686.0	1.81	1,598.23
1991	6,916.1	2.15	2,090.09
1992	14,463.1	2.65	3,023.22
1993	29,660.3	4.28	3,944.71
1994	22,229.2	2.43	1,882.71
1995	75,940.6	3.87	3,721.85
1996	1,112,995.0	4.06	42,189.27
1997	110,452.7	3.89	3,857.62
1998	80,750.4	2.92	2,564.16
1999	92,792.5	2.91	2,763.66

2000	115,952.2	2.39	2,955.09
2001	132,433.7	2.39	3,102.90
2002	225,036.5	3.93	4,368.37

Because successive Nigeria governments have viewed FDI as a vehicle for political and economic domination, the thrust of government's policy through the Nigeria Enterprise Promotion Decree (NEPD) (indigenization policy) was to regulate rather than promote FDI. The NEPD was promulgated in 1972 to limit foreign equity participation in manufacturing and commercial sectors to a maximum of 60%. In 1977 a second indigenization decree was promulgated to further limit foreign equity participation in Nigeria business to 40%. Hence, between 1972 and 1995 official policy toward FDI was restrictive. The regulatory environment discouraged foreign participation resulting in an average flow of only 0.79% of GDP from 1973 to 1988. The adoption of the structural adjustment programme in 1986 initiated the process of termination of the hostile policies towards FDI. A new industrial policy was introduced in 1989 with the debt to equity conversion scheme as a component of portfolio investment.

The Industrial Development Coordinating Committee (IDCC) was established in 1988 as a one-step agency for facilitating and attracting foreign investment flow. This was followed in 1995 by the repeal of the Nigeria Enterprises Promotion Decree and its replacement with the Nigerian Investment Promotion Commission Decree 16 of 1995.

The NIPC absorbed and replaced the IDCC and provided for a foreign investor to set up a business in Nigerian with 100% ownership. Upon provision of relevant documents, NIPC will approve the application within 14 days (as opposed to four weeks under IDCC) or advise the applicant otherwise. Furthermore, in consonance with the NIPC decree, the Foreign Exchange (Monitoring and Miscellaneous Provision) Decree 17 of 1995 was promulgated to enable foreigners to invest in enterprise in Nigeria or in moneymarket instruments with foreign capital that is legally brought into the country. The decree permits free regulation of dividends accruing from such investment or of capital in event of sale or liquidation.

An export processing zone (EPZ) scheme adopted in 1999 allows interested persons to set up industries and businesses within demarcated zones, particularly with the objective of exporting the goods and services manufactured or produced within the zone.

In summary, the polices embarked on by the Nigerian government to attract foreign investors as a result of the introduction of the SAP could be categorized into five: the establishment of the Industrial Development Coordinating Committee (IDCC), investment incentive strategy, non-oil export stimulation and expansion, the privatization and commercialization

programme, and the shift in macroeconomic management in favour of industrialization, deregulation and market-based arrangements.

2. LITERATURE REVIEW

Conceptual review

Foreign direct investment (FDI) is described as one of the most dynamic phenomena in the recent wave of globalization (Baltagi, 2006). There is a vast pool of literature on foreign trade and investment dating as far back as the Smithian era (1776). While the mercantile economic system propagated hoarding and a close economy, the Smithian economic system was known for its proposition of the free trade and open market system (Adelopo, 2010).

The arguments for foreign investment also grow largely out of the traditional neo- classical and new growth theory analysis of the determinants of economic growth. For instance the neoclassicals hold the views that free trade and investment enhances the accumulation of capital stock provided that adequate consideration is given to factor prices and technology.

Foreign direct investment (FDI) is considered as a major and integral part of an open and international economic system and a major catalyst to development (OECD, 2002).

FDI refers to investment made to acquire a lasting management interest (usually at least 10 % of voting stock) and acquiring at least 10% of equity share in an enterprise operating in a country other than the home country of the investor; it can take the form of either "greenfield" investment (also called "mortar and brick" investment) or merger and acquisition (M&A), depending on whether the investment involves mainly newly created assets or just a transfer from local to foreign firms (Mwilima, 2003).

It may be in the form of transfer of ownership from domestic to foreign investors, or in the form of expansion in productive capacity and capital formation in a country (Adelopo, 2010).

FDI is also an investment in real assets where real assets consist of physical things such as factories, land, capital goods, infrastructure and inventories (Adeleke, 2010).

FDI is also seen as an engine of growth as it provides the much needed capital for investment, increases competition in the host country industries, and aids local firms to become more productive by adopting more efficient technology or by investing in human and/or physical capital (Ajayi, 2006).

The Organization for Economic Cooperation and Development (1983) defines Direct Investment enterprise as an incorporated or unincorporated enterprise in which a single foreign investor either controls 10 percent or more of the ordinary shares unless it can be established that this does not allow the investor an effective representation in the management of the enterprise or controls less than 10 percent (or more) of the ordinary shares or voting power of the enterprise but has an effective representation in the management of the enterprise.

FDI may also be seen as any form of investment that earns interest in enterprise which functions outside the domestic territory of the investor (Kamaraj, 2008). It requires a business relationship between a parent company and its foreign subsidiary. This foreign direct business relationship gives rise to multinational corporations and for an investment to be regarded as an FDI, the parent firm needs to have at least 10 percent of the ordinary shares of its foreign affiliates. The investing firm may also qualify for an FDI if it owns voting power in a business enterprises operating in a foreign country.

FDI works as a means of integrating under developed countries into the global market and rising capital availability for investment (Dinda, 2006). FDI is further seen to be investment involving a long-term relationship and reflecting a lasting interest and controlled by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate). It implies that the investor exerts a significant degree of influence on the management of the enterprise resident in the other economy. FDI may equally be undertaken by individuals as well as business entities. (UNCTAD, 2008).

It is generally well known that the modest levels of, and disparity in the distribution of FDI inflows, are due to factors such as a deficient regulatory framework, a poor business environment and opportunities, weak FDI policies and incentives, poor institutional frameworks, limited market access, unfavorable comparative costs and lack of political stability (UNCTAD, 2009).

Theoretical review

Several economics theories attempted to evaluate the role of FDI in the country both from positive and negative point of view. Economic theories like **neo-classical theory**, **dependency theory**, **eclectic theory** and **endogenous growth model theory** are going to be considered as basic points of discussion. **Neoclassical perspective** is based on a basic principle in economics, which suggests that economic growth requires capital investment in the form of long-term commitment (Adams, 2009). This simply means that this theory creates a better relationship between the FDI and economy development of every society most in particular developing countries.

The second theory to be considered is **dependency theory;** According to Aremu (2005), dependency theory maintains that, the poorness of developing countries is due to: imperial neglect; overdependence upon primary products as exports to developed countries; foreign investors' malpractices, particularly through transfer of price mechanics; foreign firm control of key economic sectors with crowding-out effect of domestic firms; implantation of inappropriate technology in developing countries; introduction

of international division of labour to the disadvantage of developing counties; prevention of independent development strategy fashioned around domestic technology and indigenous investors; distortion of the domestic labour force through discriminatory remuneration; and reliance on foreign capital in form of aid that usually aggravated corruption.

Furthermore, the **dependency theorists** also focused on the several ways by which, FDI of multinational corporations distort developing nation economy. Some scholars of this theory believed that, distortive factors include the crowding out of national firms, rising unemployment related to the use of capital-intensive technology, and a marked loss of political sovereignty (Umah, 2007). It has also been argued that FDI are more exploitative and imperialistic in nature, thus ensuring that the host country absolutely depends on the home country and her capital (Anyanwu, 1993). This theory from its points of analysis could be discovered that it creates negative relationship between FDI and economy growth of the developing countries. The theory is of great belief that the economy involvement of developed countries into developing nations under multinational companies and FDI will surely resort to economy disadvantages of developing nations.

While neoclassical theory assumes the notion that long term investment is a great determinant of the economic growth of the country, **endogenous growth model theory** explained that physical investment is not a measure of economy growth of a country but the effectiveness and efficiency in the use of these investments. Economic models of endogenous growth have been applied to examine the effects of FDI on economic growth through the diffusion of technology. (Barro, 1991). Romer (1990) argues that FDI propels economic growth through strengthening human capital, the most essential factor in R&D effort; while Grossman and Helpman (1991) emphasize that an increase in competition and innovation will result in technological progress and increase productivity and, thus, promote economic growth in the long run. From the analyses made under this theory, it can be discovered that the theory suggests a better relationship between the FDI and economy growth of the developing countries.

The last theory to be considered is eclectic theory of FDI. According to the "eclectic" theory of FDI, countries that have a 'location advantage' will attract more FDI (Dunning, 1993). Location specific advantage embodies any characteristic (economic, institutional and political) that makes a country attractive for foreign direct investment. Where domestic resources to investment are limited, foreign capital inflows are necessary. So, the common perception is that FDI is largely driven by market size and natural resources. Essentially, this study is specifically built upon the eclectic theory

Empirical review

A wide range of studies is available in literature on the determinants and impact of FDI on a host country economic improvement. Most of the studies focus on the overall effect of FDI on macroeconomic growth and other welfare-enhancing processes, and on the channels through which these benefits take place and is transmitted (OEDC, 2002).

It is important to note that the review of literature will explore studies on the empirical determinants of FDI inflows in host country economies and the FDI led Economic improvement nexus. It is in this nexus that the major and significant determinants of a FDI are revealed.

Udoh and Egwaikhide (2008) in their studies on FDI in Nigeria between 1970 and 2005 using the GARCH model found that exchange rate volatility and inflation uncertainty exerted significant negative effect on FDI. Their study also revealed that infrastructural develoment, appropriate size of government sector and international competitiveness are crucial determinant of FDI inflows into the Nigerian economy.

Carkovic and Levine (2008) examine the acceleration effect of FDI using a generalized method of moment panel estimator (GMM) from 1960 to 1995 and dynamic panel procedure with five year averaged data. They examined if the growth effect of FDI depends on the recipient country's level of education attainment, economic development, financial development and trade openness. They noted that while sound macroeconomic policies may spur both growth and FDI, their result indicated an inconsistency with the view that FDI exert a positive impact on growth that is dependent on other growth determinants.

Furthermore Shan (1997) studied separately FDI led growth hypothesis using econometrics evidence from China. Their study re-examined FDI led growth hypothesis in the case of China, a country which has become one of the major recipient of FDI in the world. They employed a quarterly time series data and a vector auto regression model (VAR) applying the granger no-causality procedure. Their result indicates a two causality running between industrial growth and FDI inflow for China.

Herzer (2006) using a time series and panel co integration test on FDI and growth with the aid of a bi-variate model revealed that there is no clear association between the growth impact of FDI and the level of per capita income, the level of education, the degree of openness and the level of financial market development in the developing countries.

Ahmed (2007) however using evidence from Sub-Saharan African country on the causal link between export, FDI and output observed a causal link between FDI- export and FDI income. He noted that FDI has contributed to higher economic growth directly and indirectly.

Barthel (2013) also in his studies on the characteristic and determinants of FDI in Ghana using a qualitative and quantitative method based on data from the World Bank emphasis the growth enhancing capability of FDI and noted that the most important factor attracting FDI to a country are macroeconomic and political stability.

In the same vein Abosi (2008) using OLS and error correction model highlighted GDP per capita and openness as having positive impact on FDI while infrastructure like telephone have negative impact on FDI in Ghana. Cleeve (2010) in his study on the effectiveness of fiscal incentive to attracting FDI to Sub-saharan African countries using a multiple regression analysis provided support for fiscal incentive to attracting FDI to SSA after controlling for the traditional, political, institutional and policy variables.

Alba and Garde (2008) in the work on a new look at host countries determinants of FDI inflows, a log model regression analysis observes that inward FDI is determined by economic factors, quality of business environment and the quality of governance.

Hasen and Glanluigi (2007) using a panel data and a regression technique in their studies on the determinant of FDI in Arab Maghreb Union (AMU) countries noted that trade openness and foreign market are not significant for FDI inflow in the AMU countries and exchange rate also has a negative impact while growth of market size and existing stock of FDI are significant.

Asiedu (2002) also in her research indicated a mixed result for the determinant of FDI in developing countries. But Numenkamp and Spatz (2002) using a spearman correlation coefficient and panel data regression model identified traditional market determinants as dominants factors of FDI.

Based on the above empirical reviews especially, emphasis on Dunning (1980) that employed time series analysis using ordinary least square regression method over 1973 to 1992 on Tanzania in analyzing the impact of some socio-economic variables on capital flight. This current study is a replica in Nigeria with a major focus on domestic investment, to examine the effect of capital flight on domestic investment in Nigeria using Error Correction Model (ECM). Thus, this study fills the existing research gap.

3. METHODOLOGY

This section develops the estimating equation and draws from the literature by using theory of eclectic paradigm developed by Dunning (1980) which merged several isolated theories of international economics which is basically the three forms of international activities of companies such as ownership advantage, locational advantage, and internalisation advantage. According to the theory, locational advantages are necessary for FDI. In

furtherance to Dunning's theory, Denisia (2010) identifies factors such as technology, economies of learning, economies of scale and scope, and greater access to financial capital which make the companies entering other countries triumph over foreign costs in foreign markets. He added some factors which determine the host country and other qualitative or quantitative factors such as transportation, telecommunication, market size, political advantages such as government policies, cultural diversity and attitude towards strangers.
In line with this eclectic paradigm, efforts were made to include factors such as openness of trade, inflation, electricity consumption, exchange rate and gross domestic product which affect flow of FDI to Nigeria.

$$FDI = f(GDP, OPEN, INFL, INFRA, EXR) \quad (1)$$

The structure of the model, which assumes a logarithmic form, is:

$$\text{Log } FDI_t = \alpha_0 + \alpha_t \text{LogGDP}_t + \alpha_2 \text{LogEXR}_t + \alpha_3 \text{LogOPEN}_t + \alpha_4 \text{LogINFL}_t + \alpha_5 \text{LogINFRAt} + \varepsilon_t \quad (2)$$

With
Endogenous variables: FDI
FDI : Foreign Direct Investment
Exogenous variables: GDP, EXR, OPEN, INFL, INFRA,
GDP : Gross Domestic Product
EXR : Exchange Rate
OPEN : Economic Openness (ratio of exports plus imports to GDP)
INFL : Inflation
INFRA : Electricity consumption (Mega Watt/hour)
t : Time subscript
ε_t : The error term

It is expected that variables included as explanatory variables such as Gross Domestic Product (GDP), openness of trade and electricity consumption , show positive relationship with FDI while inflation and exchange rate could exhibit either negative or positive relationship depending on the type of investment that dominate the FDI within the study period.

Data and estimation

The period covered is 1985 to 2013. The choice of the period is informed by the developments in the Nigerian economy (the era of deregulation). The official change in policy direction towards FDI was in 1988 with the establishment of the Industrial Development Coordination Committee (IDCC). The Companies and Allied Matters Decree was also created in 1990,

Nigerian Investment Promotion Commission (NIPC) 1995 and between 2003 to 2007 National Economic Empowerment Development Strategy (NEEDs) was also created.

To achieve the stated objectives of the study, annual time series data of the variables were used. The data were sourced from the Central Bank of Nigeria's Statistical Bulletin (2013), United Nation Conference On Trade And Development (UNCTAD, 2013), United Nations Organisation for Education, Science and Culture and the World Bank's World Development Indicators *(2013)*.

4. THE RESULTS

Stationary test

To study the effect of FDI on economic growth, variables stationary should be checked. A time series is considered stationary if its expectation and its covariance are constant and independent of time on the one hand, and its variance is finite and independent of time on the other.

To test the stationarity, the series (LogGDP, LogFDI, LogEXR, LogOPEN, LogINFL and LogINFRA) is exposed to unit root tests. The results are listed in the table below. The ADF results below show that all the variables are non stationary at level, i.e.I(0) at 5 percent confidence levels.

Table 3: Unit Root Test Result at Level

Variables	Order	Included in Test Equation	ADF Test Statistic	Mackinnon Critical Value
LogGDP	I(0)	Trend & Intercept	-2.0738	-3.5806
LogFDI	I(0)	Non	-0.6506	-1.9533
LogEXR	I(0)	Trend & Intercept	-2.2507	-3.5875
LogOPEN	I(0)	Intercept	-2.1646	-2.9718
LogINFRA	I(0)	Trend & Intercept	-2.0588	-3.5875
LogINFL	I(0)	Intercept	-2.7337	-2.9718

Source: *Eviews output computed by the author, 2015*

The ADF results in Table 3 above show that all the variables that are non stationary at level but became stationary at integration of order one, i.e. I(1) at 5 percent confidence levels.

Table 4: Unit Root Test Result at First Difference

Variables	Order	Included in Test Equation	ADF Test Statistic	Mackinnon Critical Value
LogGDP	I(1)	Trend & Intercept	-4.6475	-3.6032
LogFDI	I(1)	Non	-10.5901	-3.5875
LogEXR	I(1)	Trend & Intercept	-4.6533	-2.9762
LogOPEN	I(1)	Intercept	-3.2804	-2.9762
LogINFRA	I(1)	Trend & Intercept	-6.3761	-2.9762
LogINFL	I(1)	Intercept	-4.6779	-2.9762

Source: *Eviews output computed by the author, 2015*

Test for cointegration

Table 5: Cointegration Rank Test (Trace Test)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.871301	127.2749	95.75366	0.0001
At most 1 *	0.721118	71.91732	69.81889	0.0337
At most 2	0.459685	37.43924	47.85613	0.3271
At most 3	0.351755	20.81797	29.79707	0.3691
At most 4	0.280901	9.113829	15.49471	0.3550
At most 5	0.007763	0.210410	3.841466	0.6464

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The trace test statistic indicates 4 cointegreting equations at the 5 percent confidence level while the max-eigenvalue test statistic also indicates 4 cointegreting equations at 5 percent level. Meaning that the variables are cointegrated and having long – run equilibrium relationship.

Table 6: Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.871301	55.35755	40.07757	0.0005
At most 1 *	0.721118	34.47808	33.87687	0.0424
At most 2	0.459685	16.62127	27.58434	0.6126
At most 3	0.351755	11.70414	21.13162	0.5771
At most 4	0.280901	8.903419	14.26460	0.2943
At most 5	0.007763	0.210410	3.841466	0.6464

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The vector error correction model (VECM)

The error correction model proposed by Engel and Granger (1987), describes a process of adjustment by contributing two types of variables, the level variables that measure long-term fluctuations and first difference variables that measure changes on the short term. The error correction model is as follows:

$$\Delta y_t = \alpha_0 + \alpha_1 \Delta x_{1t} + \alpha_2 \Delta x_{2t} + \ldots\ldots\ldots + \alpha_k \Delta x_{kt} + \gamma e_{t-1} + v_t \quad (3)$$

The coefficient γ (force towards the long-run equilibrium) must significantly be negative. The equation that relates the short-run dynamics of economic growth based on the explanatory variables in this model is as follows.

Table 7: Error Correction Model Result
Dependent variable (FDI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGINF)	-0.008	0.099	-0.083	0.935
D(LOGEXCH)	-0.014	0.190	-0.076	0.940
D(LOGINFRA)	-0.527	0.628	-0.039	0.041
D(LOGDOP1)	0.270	0.119	2.268	0.064
D(LOGGDPPC)	0.043	0.278	0.154	0.879
γ (-1)	-1.117	0.194	-5.767	0.000
R-squared	0.645	Mean dependent var	0.087	
Adjusted R-squared	0.564	S.D. dependent var	0.536	
S.E. of regression	0.354	Akaike info criterion	0.947	
Sum squared resid	2.753	Schwarh criterion	1.232	
Log likelihood	-7.255	Hannan-Quinn criter.	1.034	
Durbin-Watson stat	1.618			

Source: *Eviews output computed by the author, 2015*

Discussion of Results

According to the estimation results, it is discovered that the coefficient associated with the restoring force towards equilibrium is negative (-1.11) and statistically significant at 5%. Therefore the vector error correction mechanism, that is to say the γ can tend towards the long-run equilibrium, has been validated.

From the statistical analysis, the change in the GDP directly affects FDI flows but not statistically significant effect on FDI flows to Nigeria economy. The non significant of GDP was an indication that the economic growth in Nigeria is not brought about by expansion in the overall investment but determined by the oil sector which is not sufficient to bring the needed FDI in Nigeria. The openness of trade directly affects FDI flows but not statistically significant effect on FDI flows. The non-significant of the openness of trade could be justified on the ground that the Nigeria's foreign sector needs to perform better in the areas of manufacturing and value addition for our foreign account balance to improve. This is consistent with the World Bank report (2001) in Onayemi and Akintoye (2009) indicates that the percentage share of primary commodities in the Nigeria's export is 99% while manufacturing shares only 1%.

As regards the impact of inflation as explanatory variable on FDI, the sign based on the a priori expectation is correct since it could be negative or positive depending on the line of investment as per consumer goods or producer goods as well as the tolerable level of inflation.
The inflation in Nigeria is not justified on the ground of improved living standards but as a result of deficient domestic production which is lower than the market demand and as such, it has to import most of her goods.
Coupled with system failures, foreign investors are not motivated by the demand in Nigeria to move in their capitals and such inflationary pressures in the country scare away foreign investors because the business environments which when put together add to the overhead costs which could prevent high return on investment.

On the examination of the impact of the electricity consumption on the FDI, it shows that the level of electricity supply in Nigeria has negative impact on the flow of FDI to Nigeria. This justifies the many claims by researchers that unless power is stabilised in Nigeria, efforts to motivate foreign investors to the economy might not yield much result. The negative sign of the parameter shows that the electricity generation and consumption in Nigeria prevents investors to move in their capital from foreign economies to the economy.

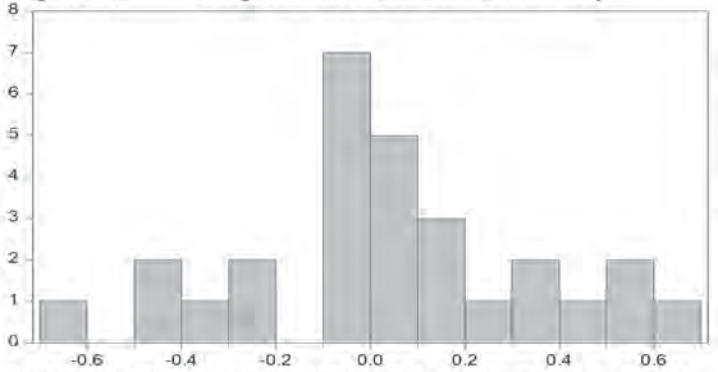
Exchange rate conforms to the economic apriori expectations though it is insignificant at 5% confidence level. Form our results; it can be deduced that the depreciation of naira has a negative impact on the rate of FDI inflow. Suffice it to say that a fall in exchange rate of a country we are trading with is a major boast for foreign direct investment inflow.
This is because it takes less amount of foreign exchange from parent country to invest in a host country. Though the naira has depreciated over the years, Nigeria has not been able to attract a significant growth in FDI because of instability and youth restiveness in the polity.

Model appropriateness test

There are some features that these models should satisfy in order to be appropriate for policy consideration and implementation, the residuals must be normally distributed, absence of autocorrelation, no serial correlation, homoscedastic, etc. in this study these tests were conducted on the residuals to decide if these models are robust.

Figure 1 show the histogram of the distribution of the residuals. Figure 1 shows that the Jarque-Bera residual normality test result for the model is 0.044 with a P-Value of 97.8% which is more than 5% indicates that the null hypothesis cannot be rejected, meaning that the residuals are normally distributed.

Figure 1: Jarque – Bera Test for Normality



Source: *Eviews output computed by the author, 2015*

Serial correlation test

Table 7 shows that the Breusch-Godfrey serial correlation LM test shows a P-Value of 18% for the observed R^2 which means we cannot reject null hypothesis that the residuals are not serially correlated.

Table 8: Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.854793 Prob. F(2,20)	0.1824
Obs*R-squared	4.090445 Prob. Chi-Square(2)	0.1294

Source: *Eviews output computed by the author, 2015*

ARCH test

The Heteroscedasticity test result as shown Table 8 shows a P-Value of 61.3% for the observed R^2 meaning that the null hypothesis that the residual has no ARCH effect cannot be rejected. All these tests confirm that the model is robust for policy consideration.

Table 9: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.665167 Prob. F(6,21)	0.6785
Obs*R-squared	4.471531 Prob. Chi-Square(6)	0.6131
Scaled explained SS	2.516051 Prob. Chi-Square(6)	0.8667

Source: *Eviews output computed by the author, 2015*

5. CONCLUSION AND RECOMMENDATIONS

Different contributions of FDI to the economy of host country has been reviewed and discussed. FDI would not be able to succeed in any country without the availability of needed factors, which have been discussed as determinants of FDI in the body of the study. One of the most important factors to attract the attentions of foreign investors is a adequate infrastructural facility. Without the availability of these needed facilities, it would be risky for investors to come into any country. This simply means that, for a nation to enjoy the merits and advantages of multinational companies, her government would have done much more enough to put in place a better infrastructure. This can be concluded that the success of FDI in any host country is dependent upon the level of infrastructural facilities in the country. Without the availability of these needed facilities, it would be risky for investors to come into any country.

Finally, recommendations to strengthen the investment environment by reducing the obstacles to doing business, improving economic management, stemming the tide against international financial crimes, repositioning investment agencies and export promotion schemes, strengthening intellectuals property and commitment to democratic principles have been advocated in this research as significant in attracting FDI. This is important to overcome barriers to FDI inflows and increase Nigerian's share of FDI as a substantial percentage of world FDI stock.

REFERENCES

Abosi E.N (2008), Determinant of FDI in Ghana. Idep Dakare-Senegal

Adelegan, J. O. (2000). Foreign Direct Investment and Economic Growth in Nigeria: A seemingly unrelated model. *African Review of Money, Finance and Banking, Supplementary issue of Savings and Development.* 5-25.

Aluko, S.A. (1969). Financing economic development in Nigeria. *The Nigerian journal of economic and social studies,* 3(1): 39–67.

Alba, M. M. & Garde M. P. M. (2008). A new look at the host country determinant of FDI inflows. www.dsu.edu.ph/research/centers.

Ahmed A., Cheng T. & Messins G. (2007). Causal link between export, FDI and output: Evidence from Sub-saharan African Countries. *Centre for Strategic Economic Studies Melbourne.*

Adams, S. (2009). Foreign direct investment, domestic investment, and economic growth in Sub- saharanAfrica. *Journal of policy modelling.* 31 (6) 939-949.

Adeleke, S. O. (2010). Essential of multinational business finance; *Tomol Publication*, Ado-Ekiti

Adelopo, I., Omoteso, K. & Obalola, M. (2010). Impact of corporate governance on foreign direct investment in Nigeria. Leicester Business School, De Montfort University.

Ajayi, S. I. (2006). FDI and economics development in African. Paper Presented at the ADB/AERC international conference in accelerating african development, Tunis.

Aremu, J. A. (2003). National centre for economic management and administration, macro- economic policy analysis and management program, designed for research staff of the Central Bank of Nigeria.

Asiedu, E. (2002). On the determinants of foreign direct investment to developing countries: Is Africa different? *World Development,* 30(1): 107–119.

Anyanwu, J. C. (1993). An econometric investigation of determinants of foreign direct Investment in Nigeria. Investment in the Growth Process: *Nigerian Economic Society Conference* 219–40.

Ayanwale, A. B. (2007). FDI and economic growth: Evidence from Nigeria. *African Economic Research Consortium (AERC).*

Barro, R. J. (1993). Economic growth in a cross section of countries. *Quarterly Journal of Economics.* 106 (2), 407 – 443.

Bartels & combrugghe (2009), FDI policy instruments: Advantages and Disadvantages. UNIDO *Research and Statistic branch Working paper 01/2009.*

Baltagi, B. H, Egger, B. & Pfaffermayr. M. (2007). Estimating models of complex FDI: Are there third countries Effect? *Journal of Econometrics* 140, 260-281.

Carkovic, M. & Levine, R. (2005). Does Foreign direct investment accelerate economic Growth.

Dinda, S. (2009). Factor attracting FDI to Nigeria: An Empirical Investigation. *Madras School of Economics, Gandi Mandapam Road Kottur, Chennia 600025,Tamil Nadu India.*

Denisia, V. (2010). Foreign direct investment theories: An overview of the main FDI theories. *European journal of interdisciplinary studies. 2 (2), 53 - 59*

Dutse A.Y. (2008). Nigerian economic growth: Emphasizing the role of foreign direct investment in transfer of technology. Communication of IBIMA. 76- 83.

Dunning, J. H. (1993). International production and the multinational enterprise. London: George Allen and Unwin.

Dunning, J. H. (1980). Eclectic paradigm. Retrieved from http://wikipedia the free encyclopaedia

Ferderke, I. (2002). Determinants of foreign direct investment – A tale of nine theoretical models. *Journal of Economic Surveys.* 23(1), 165-196.

Herzer, D. (2006). In search of FDI-Led growth in developing countries. Ibero America institute of economic research.

Hasen, B. T & Gianhuigui, G. (2007). The determinant of foreign direct investment: A panel study on AMU countries. Liverpool business school.

Iyela, A. (2009). The trend of foreign direct investment in Nigeria: Problems and the way out. *Journal of the National Association for Science, Humanities and Education Research.* 7 (1) 15 - 25.

Jerome, A. & Ogunkola, J. (2004). Foreign direct investment in Nigeria: magnitude, direction and prospects. Paper presented to the African Economic Research Consortium Special SeminarSeries. Nairobi, April.

Kamaraj, C. S. (2008), Foreign Direct Investment. Institute of Management Studies, Madura- 632022.

Mwilima, N. (2003). Foreign direct investment in Africa. African labour research network; Labour resources and research institute (LaRRi). African Social Observatory Pilot Project. P994.

Nunnenkamp, P. & Spatz, J. (2002). Determinants of FDI in developing countries: Has globalisation changed the rules of the game? *Transnational corporations*, 6(11): 1-34.

Onayemi, J. A. & Ajakaiye, T. M. (2000): The impact of foreign direct investment on the Nigeria economy. *Nigerian journal of banking and financial issues*, 3 (1):34-60.

Piana, V. (2005). Foreign direct investment. Economics WEB instituted. Retrieved from http://www.economicwebinstituted.org.

Romer, P. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5):121- 149.

Shan. J. (1997). The FDI-Led growth hypothesis: Further econometric evidence from China. National centre for development studies. *Australian national university research school of pacific and Asian studies. Economic Division Working Paper* 97/2.

Spatz (2002). Using a spearman correlation coefficient and panel data regression model identified traditional market determinants as dominants factors of FDI.

Udeaja, E. A, Udoh, E & Ebong, F. S. (2008). Do determinants of FDI in Nigeria differ across sectors? An empirical assessment. *Central Bank of Nigeria Economic and Financial Review*, 46 (2): 31-54.

Udoh, E. & Egwaikhide, F.O. (2008). Exchange rate volatility, inflation uncertainty and foreign direct investment in Nigeria. *Bostwana Journal of Economics,* (5).7: 210-242.

Umah, K. E. (2007). The impact of foreign private investment on economic development Of Nigeria. *Nigeria Journal of Economics and financial research,* 1 (3):10-42.

UNCTAD (2009),Trainning Manual on Statistic for FDI and the Openness of TNCS, Vol. 1.

UNCTAD (2009), Nigeria Investment Policy Review.

INVESTORS' EDUCATION AND THE NIGERIAN CAPITAL MARKET

Babajide .M. Oyewo,[1] Abiodun Adesola [2]

[1]Department of Accounting, University of Lagos
[2]Vetiva Capital Management Limited, Lagos

E-mail:
meetjidemichael@ymail.com (B. M. Oyewo)
sola.abiodun@gmail.com (A. Adesola)

ABSTRACT

Investors' education is considered to be very critical to the development of capital market in any nation because of its potency as a tool for investors' protection. There are evidences on the education of capital market investors by regulators in Nigeria but researches as to the impact of such education on the Stock market are almost non-existent. This paper is an attempt to investigate how investors' education affects the capital market from three perspectives— knowledge about the capital market; application of knowledge about the capital market to investment decision; and returns from the capital market as a result of knowledge application. The questionnaire as the research instrument was used to gather responses; 160 copies were administered, 103 retrieved but 98 copies found useable for analysis. Statistical analysis were carried out using Mean (M), standard deviation (SD), skeweness analysis, Pearson product correlation, and Ordinary Least Square (OLS) regression. It was observed that investors education had a strong, positive relationship with knowledge ($r = .690$, $p \leq .000$); strong, positive relationship with application of knowledge ($r = .817$, $p \leq .000$), somewhat weak, positive relationship with the level of returns ($r = .203$, $p \leq .045$); and a strong, positive relationship with the level of investment ($r = .421$, $p \leq .045$). Investors submitted, however, that their knowledge about the capital market has not really translated into profitable and satisfactory returns. This may not be unconnected to the unstable and unfavourable conditions in the capital market. Considering that all stakeholders and the Nigerian economy at large benefit collectively from a thriving capital market, we submit that capital market players should play a part in enhancing capital market literacy. Whilst acknowledging efforts hitherto made by SEC, NSE, CIS and other collaborating institutions towards investors' education, such activities could be stepped-up to achieve more results.

Keywords: Capital market, Capital market literacy, Investor education, Nigeria Stock Exchange, SEC

1. INTRODUCTION

The financial system is made up of financial intermediaries, financial market, and the rules regulating the flow of funds in the economy (Nwankwo, 1988; Ekiran, 2000; Akinsulire, 2009). A booming economy therefore thrives on a functional financial system (Gerschenkron, 1962; Goldsmith, 1969; and Chandavarkar, 1992). The financial market is split into; the money market, which provides platform for exchanging short term capital with a lifespan of one year and; the capital market where long-term funds are transacted. If the financial system is important to economic development, it follows logically that the capital market, on one hand, is relevant to economic development; and on the other hand that the development of the capital market directly affects the development of the economy. Long term funds are needed for developmental projects whose financing needs exceed the short time horizon. The existence of the capital market is then very fundamental to economic development, since developmental projects, which are characteristically long-term in nature, bring about economic development (Iyola, 2004; Osaze & Anao, 1999); issues concerning the development of the capital market therefore merit attention.

The Nigerian capital market became operational in June 1961, starting as the Lagos stock Exchange but metamorphosed to the Nigerian Stock Exchange in December 1977. Since the Nigerian capital market was birthed, different financial instruments have been traded. According to Mary, Adedinran & Elizabeth (2012), activities and volume of securities transacted in the Nigerian capital market have witnessed an upward trend.

On the basis of the foregoing discussions as to the criticality of the capital market to economic development, we can assert that issues concerning the development of the capital market therefore merit attention. One of such issues that have occupied public discourse is investors' education. Happenings surrounding the emergence and topicality of investors' education are not far-fetched. The capital market, which is a subsystem of the financial system, provides opportunities for lenders and borrowers of funds to freely operate. Notwithstanding the openness of the financial market for participants to freely operate, it has its peculiarities, technicalities and dynamism, which justifies having knowledge as per the workings of the market. De Santis & Imrohoroglu (1997) supported by Ekiran (2000), Soyede (2005) and Echekoba, Ezu, & Egbunike (2013) maintained that the capital market is well organized, highly specialized and very volatile. The capital market is complex, yet open to the investing public to participate. This implies that to actively participate in the market, having requisite knowledge about the working of the market is crucial. Capital market participants, especially regulators, acknowledge the need to reconcile this divergence, and in response make efforts to educate the members of the public.

Capital market literacy is an issue not unconnected with the capital market itself. Suffice it to state therefore that it is as old as the capital market (Okanlawon, 2014). Investors' education is considered to be very critical to the development of capital market in any nation because of its potency as a tool for investors' protection (Esiedesa, 2015).

The gamut of empirical literature on the capital market have considered array of issues connected to the capital market such as the impact of capital market on economic development (Levine & Zervous, 1996 ; Osinubi & Amaghionyeodiwe, 2003; Adamu & Sanni, 2005; Vazakidis & Adamopoulos, 2009; Kolapo & Adaramola, 2012; Echekoba, Ezu & Egbunike, 2013), attitude of investors to capital market investments (Daniel, Hirshleifer & Subrahmanyam, 1998; Barbara & Jing, 2012; Dhiraj & Payal, 2012; Olokoyo, Oyewo & Babajide, 2014) and determinants of stock market development (Demirguc-Kunt & Levine, 1996; Garcia & Liu, 1999; Yartey & Adjasi, 2007; and Aduda, Masila & Onsongo, 2012), amongst others.

Studies on investors' knowledge & education and the capital market— some of which were undertaken in other countries by Bernheim, Garrett & Maki (2001); Bernheim & Garrett (2003); Guiso & Jappelli (2004); Hong, Kubik, & Stein (2004); Brown, Ivkovic, Smith, & Weisbenner (2008); Lusardi & Mitchell (2008); Brown & Taylor (2010); Calcagno & Monticone (2011); Toloie-Eshlaghy, Maatofi, & Dankoub (2011); and Acquah-Sam & Salami (2013) — are scarce in Nigeria. There are evidences as to the education of capital market investors by regulators in Nigeria (Emejo, 2015; Egene, 2015; Esiedesa, 2015; Okanlawon, 2014), but researches on the impact of such education on the Stock market are almost non-existent. The education is targeted at equipping investors and making them sophisticated to be better off on different capital market issues. By our reckoning, assessing the extent to which such education is achieving its objectives is crucial. The motivation to undertake this study is therefore not unconnected to satisfying this intellectual curiosity. This paper is an attempt to explore how investors' education affects the capital market from three perspectives — knowledge about the capital market; application of knowledge about the capital market to investment decision; and returns from the capital market as a result of knowledge application.

The study aims to find out the influence of investors' education on the development of the Nigerian capital market. Specifically, the study seeks to:

(i) Examine whether the education of investors on capital market matters impact significantly on their knowledge about the market
(ii) Investigate whether investors apply the knowledge gained on capital market matters to making investment decisions
(iii) Find out if the application of knowledge about the capital market affects returns earnings by investors

The rest of the paper is structured as follows; the review of literature, encompassing discussion of theories explaining the influence of investors' education on the capital market development (theoretical framework); and the development of the conceptual framework which synthesizes the theories, and the elements of investors' education to explain how the capital market development is consequently affected. Next, we present the research methodology, results and discussion of findings. The final section of the paper, the concluding remarks, recapitulates major the findings of the study, whilst also offering relevant recommendations.

2. LITERATURE REVIEW

Investors' education and the Capital market

Investors' education has to do with providing the investing public with knowledge, skills and tools to understand the dynamics of the capital market. Investor education will cover several issues including, but not limited to; the importance of the capital market and long term investments; instruments traded; investment schemes; capital market players; their rights as investors; how to assess listed firms performances; drivers of stock performance; fundamental and technical analysis; mechanics of investing in the capital market; capital market regulatory framework; dealers' dealing activities; indices used to depict capital market performance; and other information that will equip them with knowledge of the market.

The capital market is the segment of the financial market, involved in mobilizing and disbursing medium and long term source of funds, ranging from government securities, corporate bonds, preference shares, to equity instruments (Brigham and Houston, 2013 ; Akinsulire, 2010).

Investors in the capital market are both retail and institutional. The retail investors (also known as small investors) comprise of individuals who buy directly into the market or indirectly through collective investment schemes (such as mutual funds) for their personal account and not for third parties. Institutional investors are firms that trade in securities in large sums for the benefit of third parties who are their principals. They are usually corporate organization such as banks, insurance companies, pension funds, hedge funds, mutual funds, or other institutions that have investment funds at their disposal (Akinsulire 2010; Pandey, 2007)

The institutional investors are typically more sophisticated than the individual investors because they are better informed, have more access to funds, can use the size and volume of their transactions to their advantage in minimizing transactions costs and negotiating for higher returns.

Investors' education is a burning issue which has reverberated in the capital market domain and will continue to conspicuously occupy public discourse

because it is of prime importance to the development of the capital market of any nation. It is not surprising, therefore, that interested parties in the development of capital markets view the issue seriously.

Mohammed (2012), noting that one of the major challenges facing capital market regulators is winning investors' confidence, posited that investor education is important in order to win or regain their confidence.

Efforts by capital market players to educate investors

The Securities and Exchange Commission (SEC), the apex government regulatory body of the capital market in Nigeria, is empowered by Section 82 of the Investment and Securities Act No. 45 of 1999 to engender investors' awareness and train all categories of capital market operators.

The Nigerian Stock Exchange (NSE), another body regulating activities in the capital market, partakes in investors' awareness. The Chartered Institute of Stockbrokers (CIS) also is responsible for regulating the stockbroking, securities and investment, fund and portfolio management, asset management, investment management profession, and collaborating with regulators on different capital market matters, including enlightening the public on security investments.

In a bid to deliver on its mandate, the SEC has made efforts to educate investors via different forum such as workshops; seminars; collaborations with trade associations, professional bodies, operators; and public enlightenment. There are documented evidences of collaboration among some stakeholders in the capital market to enhance investors' education in recent times (Afolake, 2015; Emejo, 2015; ThisDay, 2015). For example, the Securities and Exchange Commission (SEC) and the Chartered Institute of Stockbrokers (CIS), in January 2015, announced plans to prioritise investors' education in order to rouse the participation of local investors in the Nigerian capital market (Afolake, 2015; Emejo, 2015). This was a move stemming from the observation that the involvement of foreign investors (dominating about 60% of the market) was deeper than the locals (Esiedesa, 2015). About three million Nigerians are believed to be participating in the market as at January 2015 (ThisDay, 2015).

The establishment of the second tier and third tier security markets, alongside the first tier market, was also a move by regulators to promote local content in capital market participation; and also diversify and deepen the capital market. The conditions for listing on these alternative markets— such as minimum capital requirement, number of shareholders, distribution of shares among members of the public, quotation fees, account publication requirements— are less stringent in comparison to that of the first tier market (Akinsulire, 2010; Osaze, 2007). This was done with the hope that indigenous firms that could not list on the first tier market, which is dominated by foreign firms, would

make inroads to the second and third tier markets, thereby promoting participation in capital market by local firms. Investors however need to be aware and realize the essence of the existence of these alternate markets, and this depends largely on their education on capital market matters. The decision to either list on the security market or patronize such listed firms rests on the extent of capital market literacy.

The creation of the Nigerian Capital Market Institute (NCM) was another step by SEC to promote investors education. The NCM, which started as Training division in the Human Recourses Department of SEC, is responsible for promoting investors literacy and training capital market operators (Brokers/Dealers, Solicitors, Registrars, Reporting Accountants, Issuing Houses, Issuers of Securities, Auditors, Receiving bankers, Trustees, Investor).

In spite of efforts by SEC and NSE as per investors' education, the Capital Market Committee (CMC), noted that the capital market literacy in Nigeria is at 16%, which is considered low, in comparison with other countries such as Brazil, South Africa and Malasia (Okanlawon, 2014).

The CMC is an industry-wide committee comprising representatives of SEC, Capital Market Operators, Trade Groups and other stakeholders which meet every quarter to deliberate on various issues affecting the market.

Making efforts to educate the public is one matter, and the application of the knowledge to profit from capital market activities is another. In other words, investors education is targeted at equipping investors with requisite knowledge, which when applied should culminate in making informed investment decision. Quality investment decision should in turn lead to satisfactory returns.

Review of Empirical Studies

Acquah-Sam & Salami (2013) examined how public knowledge and public confidence affect capital market activities in the Ghana stock market, as well as the factors that promote capital market knowledge and participation. The results reveal that capital market participation is significantly and directly affected by the level of knowledge about capital market. It was recommended that schooling, media publications, social interactions, and one's occupation or profession are all major factors that promote knowledge about capital market activities.

Guiso & Jappelli (2004) and Brown & Taylor (2010) argued that awareness about financial instruments and investment opportunities are important determinants of financial markets participation, as these variables correlate positively with education, household incomes and wealth, long-term bank relations and social interactions. Toloie-Eshlaghy, Maatofi, & Dankoub (2011) and Acquah-Sam & Salami (2013), lamented that unfortunately,

individual investors in developing nations are not taking advantage of the importance of the capital market by transacting in securities (low market participation), consequently resulting to poor liquidity and capitalization.

The consequences of lack of financial literary was the focus of Bernheim, Garrett, & Maki's (2001), and Bernheim & Garrett' s (2003) studies (cited in Acquah-Sam & Salami (2013); it was concluded that individuals exposed to financial education in schools and workplace save more and participate more in capital market invests. This conclusion was supported by Rooij, Lusardi, & Alessie (2007), Lusardi & Mitchell (2008), and Calcagno & Monticone (2011).

Brown, Ivkovic, Smith, & Weisbenner (2008) and Brown & Taylor (2010) demonstrated the direct connection between investor awareness through information about the capital market and decision to own financial securities, emphasizing the importance of word-of-mouth as a very effective communication tool in social settings. Hong, Kubik, & Stein (2004) relied on the peer-effects theory to explain the impact of peer influence in passing information on investment, and its efficacy in influencing investment decisions. They concluded that a "social" investor finds the market more attractive to participate in when more of his peers participate in the market. Hong, Kubik, & Stein, (2004) work reiterates that informal means of education can be exploited to provide investors' education.

Theoretical Framework

Two theories—theory of planned behaviour and expectancy theory— were adopted to explain how capital market investors' education influences the capital market development.

1) Theory of Planned behaviour

The theory of planned behaviour helps to understand how people's behaviour can be influenced (Ajzen & Fishbein, 1980; Ajzen, 1991; Canary & Seibold, 1984; Sheppard, Hartwick, & Warshaw, 1988).). The theory contends that peoples' behaviour can be planned, and actions can be deliberate to achieve a desired outcome; behavioural control and behavioural intention can be used to directly predict behavioural achievement.

Theoreticians in support of the planned behaviour proposed that peoples' behaviours are guided by three considerations— behavioural beliefs, normative beliefs, and control beliefs:

a) Behavioural beliefs refer to the beliefs about the likely consequences of one's behaviour
b) Normative beliefs are the belief about the normative expectations of others

c) Control beliefs are beliefs about the presence of factors that may facilitate or impede performance of behaviour adoption

The theory explains the influence of investors' education on capital market development thus:

Behavioural beliefs:
It is well known that investors' education is one of the tools for developing the capital market. Hence, capital market players (regulator and operators) will strive to educate investors in the capital market (the behaviour) to the extent that it is believed such knowledge will lead investors to taking actions that will contribute to the development of the capital market (the outcome). To state it differently, educating the investing public by capital market players is targeted at further developing the capital market.

Normative Beliefs:
Normative belief is also relevant in the context because it is reasonable to assert that the extent to which individual investor will participate in the market (by seeking knowledge) is dependent on the returns expected. Investors' education is not the entire responsibility of capital market players; individual investors owe themselves responsibilities to continuously hone their skills and knowledge in capital market matters. If an investor holds the belief that getting educated on capital market matters will lead to better investment decisions and by extension more investment returns, such investor will make efforts to get educated. In other words, the extent to which the investor will therefore seek knowledge depends on his/her normative belief about how such knowledge can be translated to better returns through informed investment decision in the capital market.

Control Beliefs:
Knowledge or information is critical in making right investment decisions. If an investor perceives that knowledge of the capital market is crucial to making wise investment decisions and it is a control factor which determines the quality of returns obtained from the capital market, the investor will seek more knowledge about the market. Knowledgeable investors therefore lead to a more developed capital market.
The regulators of the capital market believe that empowering investors through education is a potent control tool to protect them against the complexities, vicissitudes and volatilities in the market. Such control beliefs will therefore spur them to educate investors more, and make them more sophisticated, hence contributing to the capital market developed.

2) Vrooms Expectancy Theory

The expectancy theory was developed by Victor Vroom. Vroom theorized that humans act according to their conscious expectations that a particular behaviour will lead to some specific outcomes or goals. The three components of the expectancy theory are: (i) Expectancy (the belief of the person that his/her effort will result in a desired outcome or performance), (ii) Instrumentality (the belief of the person that s/he will be rewarded if the performance is met), and (iii) Valence (the value of the reward according to the reckoning of the person).

To situate the expectancy theory in the context of the relationship between investor education and the capital market, capital market regulators and operators will consciously make efforts to educate capital market investors if they expect that it will contribute to the development of the capital market. If regulators reckon that educating investors (the behaviour) will improve the level of development of the capital market (specific goal), then they will seek to educate them more. Seminars, workshops and conferences organized by capital market players are targeted at improving the knowledge of investors, with the view that the acquired knowledge could stir up motivation for more investment in the capital market.

Going by the review of literature and the conceptual framework proposed, we have put forward an overarching hypothesis, expressed in null form, thus:

H_0: Capital market investors' education does not significantly impact the Nigerian Capital market.

This is devolved into three sub-hypotheses:

H_0^1: Capital market Investors' education does not significantly impact on the knowledge about the capital market.

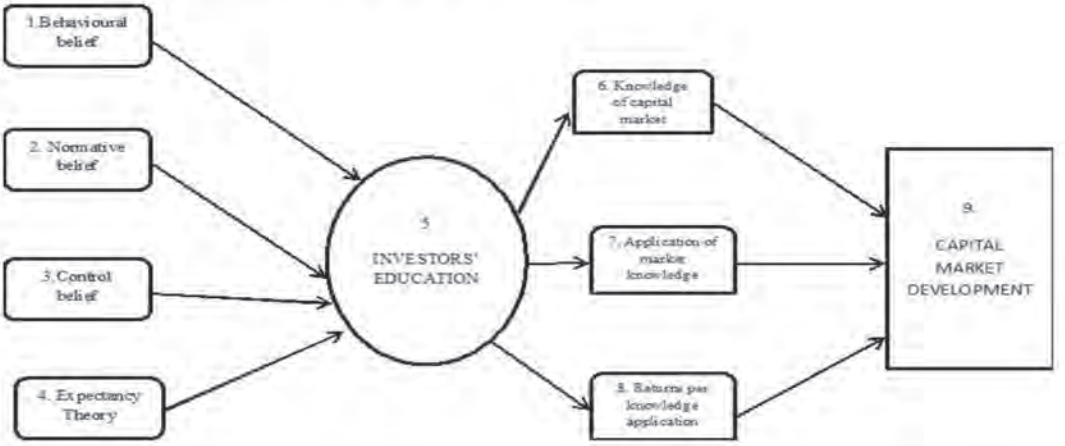
H_0^2: Capital market Investors' education does not significantly impact on the application of knowledge about the capital market to investment decision.

H_0^3: Capital market Investors' education does not significantly impact on the level of returns received from the capital market.

Conceptual Framework

The signification of theories and concepts is presented in figure 1. The motivation to educate capital market investors is explained by the theoretical elements (labels 1, 2, 3, 4). Investors' education (label 5) then results to knowledge of the capital market (label 6), application of knowledge on capital market to investment decision (label 7), and level of returns received from the capital market as a result of knowledge application (label 8). The application of knowledge (labels 6, 7, 8) ultimately contributes to the development of the capital market (label 9).

FIGURE 1: CONCEPTUAL FRAMEWORK— INVESTORS' EDUCATION AND THE NIGERIAN CAPITAL MARKET



Source: Developed by Authors (2015)

3. METHODOLOGY

Population, Samples, Sampling technique & Research instrument

The population of the study is the retail investors in the Nigerian capital market. We decided to focus on retail investors because they are limited, less-privileged and disadvantaged in capital market matters in comparison to the institutional investors.

Questionnaire was used as the research instrument to gather responses. The instrument contained respondents demographics including—income level, level of investment in the capital market, and educational qualification. 21 items focusing on the three research questions featured in the instrument (Appendix 1). Reliability of the instrument was tested using the Cronbach's alpha, which was .884 (appendix 2).

Multistage sampling, using a combination of cluster and simple random sampling, was used to administer 160 copies of the questionnaire in February 2015. The NSE building was visited, because of the proliferation of individual investors in that location and the copies of the research instrument randomly distributed. 103 copies were retrieved but 98 copies found useable for analysis.

Study Variables and Model specification:

The variables of the study are KNOWLEDGE (knowledge about the capital market), APPKNOW (application of knowledge on capital market to investment decision), RETURNS (level of returns received from the Stock Exchange) and INV_EDU (Investors' education). Variable operationalization is furnished in Appendix 1.

Three models expressing the nature of relationship among the variables are expressed in equations 1.1, 1.2 and 1.3 respectively.

$$KNOWLEDGE = \alpha_0 + \alpha_1 \underset{(+)}{INV\_EDU} + \alpha_{et} \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (1.1)$$

$$APPKNOW = \mu_0 + \mu_1 \underset{(+)}{INV\_EDU} + \mu_{et} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1.2)$$

$$RETURNS = \beta_0 + \beta_1 \underset{(+)}{INV\_EDU} + \beta_{et} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1.3)$$

Where KNOWLEDGE, APPKNOW and RETURNS are dependent variables; INV_EDU is the independent variable,

α_0, μ_0, β_0 are constants in equations 1.1, 1.2 and 1.3

α_1, μ_1, β_1 are coefficients of the independent variable

$\alpha_{et}, \mu_{et}, \beta_{et}$ are error terms of equations 1.1, 1.2 and 1.3

The relationship between the independent and dependent variables are placed in parenthesis immediately below the variable correlates.

Results presentation and analysis was sub-divided into the three themes in order to allow for thorough and specific discussion of themes.

Method of Data Analysis

Data analysis was carried out at descriptive and inferential levels. Descriptive statistics used were percentage analysis, Mean (M), standard deviation (SD), and skeweness analysis. Inferential statistics used Pearson product Correlation and Ordinary Least Square (OLS) regression. Hypotheses were tested at 5% significance level. The *IBM SPSS statistics 21* software was used to run all statistical analysis.

4. RESULTS AND DISCUSSIONS

Respondents' Demographics

Table 1 shows the income level of the respondents. In Table 1, over 80% of respondents earn at least an average income. This might have been expected

because according to economic theories, when people earn income, they will first consume, then spend before investing. To invest in the capital market, which is long term investment, one must be able to meet basic needs before saving the rest through investments. The low income-earners representing 19.4% must be extremely financial disciplined persons who know the importance of long-term investments.

Table 1 Income level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	19	19.4	19.4	19.4
	Average	61	62.2	62.2	81.6
	High	18	18.4	18.4	100.0
	Total	98	100.0	100.0	

Table 2 Level of investment in the capital market

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	35	35.7	35.7	35.7
	Low	18	18.4	18.4	54.1
	Moderate	27	27.6	27.6	81.6
	High	18	18.4	18.4	100.0
	Total	98	100.0	100.0	

In table 2, 54.1% (18.4% and 35.7%) of respondents have low and very low level of investment; 27.6% have moderate investments levels, and 18.4% are with high investment.

The very low and low level of investment may, to some extent, be attributable to the low and average income earners. These group of investors must have realized the essence of capital market investments, to the extent that they have some form of investments in the capital market, no matter how low; this could also be based on the understanding that capital investments have potentials for market growth and stock appreciation. Part of the low level investment could be traceable to high income earners who have divested from the capital market.

The moderate level of investment of 27.6% may be attributable to the general fall in prices that the stocks in the stock exchange suffered as a result of the financial straits occasioned by the 2008 economic meltdown. Many investors had to reduce their investments in the capital market in order to curtail their losses.

The 18.4% with high investment levels may represent the combination of; some of the high-income earners who did not divest from the stock market in spite of the 2008 global financial crisis; the *bottom fishers* who bought shares as prices crashed; some average and low income earners who held their securities despite the crisis.

Overall, the distribution of investment levels across respondents followed a *pareto analysis* pattern. This implies that the responses harvested were well balanced, cutting across the three broad levels of investments, with low level having the highest number of respondents; followed by the moderate level; and then high level (correspondingly with the lowest number of respondents) .

Table 3: Respondents' Educational Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First Degree	56	57.1	57.1	57.1
	Second Degree	18	18.4	18.4	75.5
	Third Degree	3	3.1	3.1	78.6
	First Degree + Professional qualification	17	17.3	17.3	95.9
	Second Degree + Professional qualification	4	4.1	4.1	100.0
	Total	98	100.0	100.0	

In Table 3, on educational qualifications, more than half of respondents (57.1%) possess first degree; the remaining 42.9% have additional qualifications beyond a first degree. This establishes that respondents have requisite academic qualifications.

The results on income levels, investments level and educational qualification portray the picture that respondents possess the requisites to respond to items in the research instrument. They are literate to read and respond (educational qualification), they earn income, they have investments in the capital market; the subject of the research should as such be of interest to them.

Capital Market Investors' Education

Analysis on capital market investors' education (Table 4) shows the importance of enlightening investors about the capital market.

On whether there are publications, programmes, conferences, seminars, trainings aimed at improving knowledge of investors/ prospective investors

about the stock exchange; 73.5% agreed; 16.3% indifferent; 10.2% disagree; M = 3.92 and SD =.991. We conclude that most respondents agree on the importance of publications, programmes, conferences, seminars, trainings in improving investors' knowledge about the NSE.

Table 4: Capital Market Investors' Education

		Response in % (*N*= 98)					Dispersion		
Item	Statement	SD	D	I	A	SA	*M*	*SD*	Skewness
Q18	There are publications, programmes, conferences, seminars, trainings aimed at improving knowledge of investors/ prospective investors about the stock exchange	2	8.2	16.3	42.9	30.6	3.92	0.99	-.870
Q19	Participation in the various workshops/confere nces, seminars, trainings etc, will help build capacity of investors in the Nigerian Stock Exchanges	n/a	n/a	8.2	61.2	30.6	4.17	0.70	-1.163
Q20	The knowledge gained from various workshops/confere nces, seminars etc, motivate you to invest more in the Nigerian Stock Exchange	n/a	n/a	12.2	62.2	25.5	4.09	0.72	-1.157
Q25	The market regulators play an important role in investors' education	n/a	n/a	8.1	62.2	29.6	4.19	0.65	-1.126
	Composite Variable (*INV_EDU*)						4.09	0.65	-.371

It is one thing to have programmes and conferences targeted at improving investors' education but another issue to participate in such. To this end, Q19 examines if participation in the various workshops/conferences, seminars, trainings etc. will help build capacity of investors; 91.8% (30.6% + 61.2%) agreed; M=4.17, SD=.704. The responses are negatively skewed (skewness coefficient of -1.163). From these statistics, we conclude that participation in the various workshops/conferences, seminars, trainings etc. will help build capacity of investors.

Seminars, workshops and conferences are targeted at improving the knowledge of investors, we therefore examine whether such acquired knowledge could stir up motivation to more investment in the capital market. 87.7% agreed; 12.3% were indifferent; *M*= 4.09; *SD*=.719. The negative skewness of -1.157 means that modal score of *5* was more than the Mean score of 4.09; we conclude, therefore, that knowledge gained from the various workshops/conferences affects investments decision.

Q25 harvests the views of investors on the roles market regulators play in educating them. Of all questions in table 4, this item had the highest number of agreement of 91.8% (29.6% + 62.2%); the highest mean (*M*=4.19); the lowest dispersion (*SD*= .653); the highest negative skewness coefficient (-1.126). All these confirm a very strong concurrence amongst respondents that capital market regulators play important role in investors' education.

In summarizing the entire results of table 4, the minimum mean score was 3.92, the maximum 4.19. The SD is less than 1.00 in all the questions, implying a strong consensus on virtually all the issues gauged by the questions. The distribution is also negatively skewed for all items, meaning that modal score exceeds Mean score in all cases. The composite variable,(*INV_EDU*) derived from the averages of Q18, Q19, Q20 and Q25, shows M=4.09, SD=.652, and a -.371 for skewness. The M= 4.09 on a 5-point scale demonstrates the overall importance of investors education, and the like-mindedness on this among respondents (SD= .652). The number of persons agreeing capital market investors education is important (Modal score of 5) are more than the mean score of 4.09, (negatively skewed means that Mode>Median>Mean)

Knowledge about the capital market

Seven questions were used to evaluate the knowledge of investors about the capital market. Results are presented in Table 5.More than half of the respondents (55.1%) agree that they have knowledge on the operations of Nigeria Stock exchange (M= 3.54, SD= .986); 82.6% agree they know the different players of the Nigeria Stock exchange; 81.7% agreed to knowing the instruments traded on the floor of Nigeria Stock Exchange (M=3.95, SD=

.737); 65.3% have an understanding of the Market capitalization (M= 3.77, SD= .961).

74.5% (19.4% +55.1%) asserted awareness of the different sector of investment opportunities available on the floor of the stock exchange (M= 3.88, SD= .803); 58.1% claim knowledge about the classes of risk associated with investment in the stock market (M= 3.66, SD= .984); and 70.4% agree they know the right channels to get any information required for investment decisions.

Table 5: Knowledge about the capital market

		Response in % (*N*= 98)					Dispersion		
Item	Statement	SD	D	I	A	SA	*M*	*SD*	Skewness
Q8	I have knowledge on the operations of Nigeria Stock exchange	2	13.3	29.6	38.8	16.3	3.54	.986	-.346
Q9	I know the different players of the Nigeria Stock exchange	2	4.1	11.2	56.1	26.5	4.01	.855	-1.230
Q12	I know the instruments traded on the floor of Nigeria Stock Exchange	1	3.1	14.3	63.3	18.4	3.95	.737	-1.021
Q13	I have an understanding of the Market capitalization	1	10.2	23.5	41.8	23.5	3.77	.961	-.506
Q15	I am aware of the different sector of investment opportunities available on the floor of the stock exchange	1	4.1	20.4	55.1	19.4	3.88	.803	-.749
Q16	I know the classes of risk associated with investment in the stock market	2	9.2	30.6	36.7	21.4	3.66	.984	-.402
Q17	I know the right channels to get any information required for investment decisions	1	13.3	15.3	50	20.4	3.76	.964	-.686
	Composite Variable (*KNOWLEDGE*)						3.80	.707	-.155

The results show that respondents have knowledge about basic issues in the capital market such as; the players, instruments traded, market capitalization and channels to access information for investment decisions.

These five items have mean score above 3.7 and are negatively skewed. However, the mean score is below 3.7 for deeper and more technical issues such as; the classes of risks associated with investment in the stock market (M=3.66); knowledge on the operations of Nigeria Stock Exchange (M=3.54). This reveals areas needing improvements in investors education campaigns, which market players should focus on.

The overall score on the knowledge about the capital market (KNOWLEDGE) is somewhat above average (*M*= 3.80), and the dispersion on knowledge level among respondents is minimal (*SD*= .707). The negatively skewed distribution (coefficient of -.155) suggests that most respondents have a knowledge level above the Mean of 3.80.The minimum proportion of respondents that affirmed (*Strongly Agree&Agree*) to each of the seven issues examined in table 5 are 55.1%.

Application of Knowledge to Investment Decision

We consider whether investors apply the knowledge gained about the capital market to investment decisions in table 6.

Table 6: Application of knowledge on capital market to investment decision

		Response in % (*N*= 98)					Dispersion		
Item	Statement	SD	D	I	A	SA	*M*	*SD*	Skewness
Q14	Ratio analysis is useful for my investment decision	n/a	2	18.4	45.9	33.7	4.11	.772	-.472
Q21	Public information made available is useful for my investment decision	1	7.1	26.5	48	17.3	3.73	.868	-.515
Q22	Investors that use published information make better investment decision that those that do not	5.1	2	5.1	55.1	32.7	4.08	.960	-1.737
Q23	I have benefited from applying my knowledge about the capital market to make good investment decisions	n/a	16.3	32.7	29.6	21.4	3.56	1.00	-.016
	Composite Variable (APP*KNOW*)						3.87	.619	-.539

Q 14 examines the usefulness and practical application of ratio analysis for investment decision-making. Ratio analysis is intertwined with the fundamental analysis theory. The fundamental analysis proposes that investors make decision on the basis of analysing financial statements (Brigham and Houston, 2013; Pandey, 2007). The analysis of past share prices using ratio is a good guide to predict future price. 98% agreed it is useful and applied in practice (M= 4.11, SD= .772).

Q 21 examines the usefulness of publicly made available information for investment decisions. The random walk theory advocates that stocks have intrinsic value, but the prices at which they sell in the market fluctuate around the intrinsic value. It is publicly made information that determines fluctuations in the prices of shares and not necessarily analysis of past trends. This question in essence tests indirectly the extent to which investors apply random walk analysis to investment decisions. 65.3% agreed to using publicly available information for decision-making (M= 3.73, SD= .868).

Though respondents agree that ratio analysis and publicly available information are applied in investment decisions, the application of fundamental analysis theory using ratio analysis (M=4.11) tend to be more popular with investors than the random walk theory (M=3.73).

As to whether the use of published information could lead to better investment decisions, 87.8% agree investors that use published information make better investment decision than those that do not (M= 4.08; SD= .960). Both the fundamental analysis and technical analysis theories rely on published information. The results therefore confirm the usefulness and application of both theories in making investment decisions.

51% agreed; 32.7% indifferent and 16.3% disagree they have benefited from applying knowledge about the capital market to make good investment decisions. This item had the lowest Mean (M=3.56), highest dispersion (SD= 1.00), lowest skewness coefficient (-.016). These statistics show that opinion is divided among investors that they have profited from application of knowledge about the capital market.

Returns from the Stock Exchange

Table 7: Level of returns received from the Stock Exchange

		Response in % (N= 98)					Dispersion		
Item	Statement	SD	D	I	A	SA	M	SD	Skewness
Q11	The Level of returns received from the Stock Exchange is satisfactory (RETURNS)	7.1	35.7	39.8	16.3	1	4.11	.772	-.472

In table 7, 17.3% agree they are satisfied with the level of returns received from the Stock Exchange. 39.8% are indifferent; 42.9% dissatisfied. The crash in the capital market following the financial crisis in 2008 caused many investors to incur financial losses on investments, for which they are yet to fully recover. It is therefore not surprising that over 80% are not currently satisfied with the present level of returns received. Result in table 7 strengthens the analysis of response to Q23 in table 6 that the knowledge which investors have, have not really translated into profitable and satisfactory returns.

Analysis of relationship — Investors' Education, Knowledge & Application of knowledge

We analyzed the relationship among Investors' education, Knowledge & Application of knowledge about the capital market using correlation and regression. Correlation result is presented in table 8; regression results are contained in tables 9, 10 and 11.

Correlation Analysis

Table 8: Correlation matrix: investor education, Knowledge & Application

		INV_EDU	KNOW	APPKNOW	RETURNS	INV.
INV_EDU	Pearson Correlation	1				
	Sig. (2-tailed)					
KNOW	Pearson Correlation	.690**	1			
	Sig. (2-tailed)	.000				
APPKNOW	Pearson Correlation	.817**	.633**	1		
	Sig. (2-tailed)	.000	.000			
RETURNS	Pearson Correlation	.203*	.332**	.279**	1	
	Sig. (2-tailed)	.045	.001	.005		
INV	Pearson Correlation	.421**	.377**	.454**	.196	1
	Sig. (2-tailed)	.000	.000	.000	.053	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Investors education has a strong and positive relationship with Knowledge, significant at 1% (r= .690, $p \leq .000$). Investors education has a very strong, positive relationship with application of Knowledge at 1% significance level (r= .817, $p \leq .000$).

Investors education has a somewhat weak, positive relationship with the level of returns at 5% significance level (r= .203, $p \leq .045$); and a strong, positive relationship with the level of investment at 1% significance level (r= .421, $p \leq .045$).

Investors' education therefore contributes positively to investors' knowledge and the application of such knowledge to investment decisions. The application of the knowledge may bring about some level of returns, not very high though.

RETURNS has a positive significant relationship with investors education (r= .203, $p \leq .045$), knowledge (r= .332, $p \leq .001$), and application of knowledge (r= .279, $p \leq .005$). The equipping of investors with knowledge through their education on capital market issues, and the application of such knowledge, in some ways enhances the returns investors make from the stock exchange, but not strongly. This result corroborates the analysis in table 7 (Q11) that investors are not really satisfied about the returns received from the stock market despite applying knowledge about the capital market to make investment decisions.

Level of investment has a significant, positive and strong relationship with each of; investors education (r= .421, $p \leq .000$), knowledge (r= .377, $p \leq .000$) and application of knowledge (r= .454, $p \leq .000$). This connotes that investors with higher investments level in the capital market will tend to be more concerned about the capital market because of their level of exposure to risks and returns. Their interest in the capital market will spur them to seek education on capital market matters, which will cause them to be knowledgeable and be able to apply the knowledge acquired to make investment decisions. The level of investment tend not to have a strong or significant relationship with level of returns (r= .196, $p \leq .053$). Investors may not profit largely from the knowledge about the capital markets because of the decline in capital market activities since 2007; this notwithstanding, it is a good thing for investors to be knowledgeable.

Regression analysis

Analysis 1- Capital Market Investors Education and Knowledge about the capital market

Table 9: Model 1 - Regression of Education on Knowledge

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R square
		B	Std. Error	Beta			
1	(Constant)	.736	.332		2.216	.029	.476
	INV_EDU	.747	.080	.690	9.329	.000	

Dependent Variable: KNOWLEDGE ANOVA P value: .000[b]
Predictors: (Constant), INV_EDU

The regression analysis of model 1 in table 9 proves that when investors' education was regressed against investors' knowledge, the result is significant.

The regressor coefficient of education is positive and significant at 1% (α_1 = .747, $p \leq .000$). The model has ANOVA $p \leq .000$, meaning the model is also significant at 1%.The R square of .476 connotes that 47.6% of the knowledge that capital market investors possess is traceable to the education provided by the capital market players. In other words, the different education programmes (conferences, seminars, etc.) significantly and positively affect investors' education up to 47.6%. Acquah-Sam & Salami (2013) research on the Ghana stock exchange revealed that the most important factor that influences respondents' knowledge about capital market activities is media publications and reports by market regulators, manager, and operators, implying these educational and media programmes are impacting positively on peoples' knowledge about capital market activities.

The balancing 52.4% (the error term, α_{et}) means there are other factors affecting investors education, such as personal interest and education by an interested investor beyond the average or regular investor education, discipline or background (accounting, finance and management discipline graduates are more likely to be knowledgeable about the capital markets because of modules undertaken at professional or academic programmes); level of investments in the capital markets (persons with high investments are more likely to take keen interest in capital markets because of their stake therein); and any other factor that could enhance investors education. Garrett & Maki (2001), Bernheim & Garrett (2003) (in Rooij, et al., 2007), and Acquah-Sam & Salami (2013) wrote that another major factor that contributed to respondents' knowledge about capital market activities was schooling/level of education. Other factors are: social interactions, and one's occupation or profession. The motivation of individual investors is complex and these changing demographics will keep playing a pivotal role in shaping the capital market.

Analysis 2- Capital Market Investors Education and the application of knowledge to investment decision

Table 10: Model 2 - Regression of Education on Application of Knowledge

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R square
		B	Std. Error	Beta			
2	(Constant)	.702	.232		3.030	.003	.667
	INV_EDU	.774	.056	.817	13.859	.000	

Dependent Variable: APPKNOW ANOVA P value: .000[b]
Predictors: (Constant), INV_EDU

Regression analysis of model 2 in table 10 shows that when investors' education was regressed against application of knowledge, the result is significant. The regressor coefficient of education is positive and significant at 1% (μ_1= .774, $p \leq .000$). The model has ANOVA $p \leq .000$, meaning the model is also significant at 1%.The R square of .667 implies that 66.7% of the knowledge that capital market investors apply to investment decisions is derived from the education provided to them by capital market players (this aligns with results of correlation between education and application of knowledge with correlation coefficient of .817). The submission by Bell & Lerman (2005) and Acquah-Sam & Salami (2013) that a large percentage of people with much knowledge about capital market activities invest in capital market securities supports this finding.

Analysis 3- Capital Market Investors Education and the Level of returns

Table 11: Model 3 - Regression of Education on Returns

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R square
		B	Std. Error	Beta			
3	(Constant)	1.576	.551		2.858	.005	.041
	INV_EDU	.271	.133	.203	2.034	.045	

Dependent Variable: RETURNS ANOVA P value: .045[b]
Predictors: (Constant), INV_EDU

Result of regression analysis of model 3 in table 11 shows that when investors' education was regressed against level of returns, the result is significant. The regressor coefficient of education is positive and significant at 5% (β_1= .774, $p \leq .045$). The model has ANOVA $p \leq .045$, meaning it is significant at 5%.The R square of .041 implies that 4.1% of the returns investors earn is linked to the level education of education they have about the capital market. This outcome is consistent with the correlation result that education and knowledge about the capital market may not lead to significant increase in returns. There are other factors beyond investors' education or the application of knowledge gained about the capital market that determines investors' returns (β_{et}, 95.9%). Investors education do not greatly impact on level of returns received from investment on stock exchange in recent times because currently, activities on the exchange has deteriorated due to exit of foreign investors on the account of foreign exchange risk, disappointing company earnings, and heightened investors' aversion. In other words, no matter how sophisticated an investor is on capital market matters, little or no returns may be made from such knowledge; this may have been different if movements in stock prices have been favourable.

Hypotheses Testing

Statistical analysis contained in tables 8, 9, 10, and 11 establishes the direction, strength and significance of the relationships among study variables. From correlation analysis in table 8, the relationship between investors' education and knowledge is significant at 1%. The strength of relationship is positive at .690. The regressor coefficient of education in model 1 (table 9) is positive at .747 and significant at 1%. We therefore do not accept the null (H_0^1) but the alternative (H_1^1) that *Capital market Investors' education significantly impact on the knowledge about the capital market.*

Also, the correlation analysis in table 8 proves the relationship between investors education and the application of knowledge to be positive, strong and significant at 1% ($r= .817$, $p \leq .000$). The regressor coefficient of education in model 2 (table 10) is positive at .774 and significant at 1%. We therefore do not accept the null (H_0^2) but the alternative (H_1^2) that *Capital market Investors' education significantly impact on the application of knowledge about the capital market to investment decision.*

In table 8, the relationship between Investors education and the level of returns is significant at 5% ($r= .203$, $p \leq .045$). In spite that the regressor coefficient in model 3 (table 11) is .271, it is significant at 5%. With this, we do not accept the null (H_0^3) but the alternative (H_1^3) that *Capital market Investors' education significantly impact on the level of returns received from the capital market.*

Overall, regression results lend credence to the validity of correlation results that investors' education impact positively and significantly on investors' knowledge, application of knowledge

Since we accepted the alternative sub-hypotheses: H_1^1; H_1^2; H_1^3 respectively, we conclude, on the whole, that *Capital market investors' education significantly impacts the Nigerian Capital market.*

Discussion of Findings

Investors find their education by regulators very relevant. They also apply the knowledge gained to make decisions. These behoove regulators to do all they can to enhance investors education. SEC is statutorily charged with the responsibility of protecting and educating members of the investing public. Equipping investors with information and knowledge is a very potent way of achieving investors' confidence. Investors have a very strong and unanimous opinion that publications, programmes, conferences, seminars, trainings help improve their education about the capital market; they believe that such could help to build investors capacity, reinvigorate the waning investors' confidence, and ultimately deepen trading activities in the Nigerian capital market. Investors' education should not be the entire responsibility of the regulators (SEC and NSE); other capital market players too have responsibilities for

investors' education. SEC, NSE, CIS and other capital market players may also engender more participation by making such programmes more accessible and pocket-friendly to members of the public, particularly the retail investors. This finding lends credence to the notion expressed by Mohammed (2012) that over the years, the SEC seems to be concentrating on organizing national and regional seminars/workshops for shareholders without necessarily making any effort to reach out to thousands of both existing and potential investors or shareholders who are residing in rural areas. In other words, the workshops are usually targeted at institutional investors only. Individuals, especially those in rural areas, should be considered and reached in such programmes to enhance capital market inclusion.

In building the capacity of investors through programmes and trainings, they will be better informed about the workings of the capital market, which will advertently lead to enhanced investors' confidence. For instance, if investors are aware that global crash in stock prices precipitated by recession is an event that occasionally happens but with future recovery prospects, this may change their perception about the current situation of the stock market and their attitude to capital market investments. With such positive outlook, coupled with well-publicized reforms to revamp the market, the stock market has a better and quicker recovery prospect.

Investors find the use of fundamental analysis (chartist theory) and randow walk theory useful in taking investment decisions. This observation corroborates the practices of researchers in stockbroking, asset management and investments firms in using market fundamentals to predict share price movements and using it to take investment decisions. The fundamental analysis however has more application in comparison to the random walk theory, perhaps because the fundamental analysis could be used to first determine the intrinsic value of shares, from where fluctuations in prices emerge as information is made public like the random walk theory advocates.

Investors also perceive that the level of returns from the capital market is not in tandem with the level of investments. Such perception could also be responsible for the ebb of activities in the capital. With the knowledge that the market has future recovery prospects, such notion could be corrected and investors' confidence restored.

Investors submitted that their knowledge about the capital market has not really translated into profitable and satisfactory returns. This may not be unconnected to the unstable and unfavourable conditions in the capital market post the 2008 global meltdown. Market capitalization fell by 13.2% (N1.749tn) from N13.226tn at the start of the year 2014 to N11.477tn by the end of 2014 (Onuba, 2015).Investors in the Nigerian capital market lost N3.23 trillion or 24.4 percent towards the end of December 19, 2014 (Egwuatu, 2014). The All Share Index (ASI) tracks the movement of stock prices,

measures performance of the exchange, and gauges the returns made by investors. The ASI nose-dived from 41,329.14 points (as at end of December, 2013) to 30,308.51 points (on 19 December, 2014) by 26.7%, meaning investors' returns witnessed free fall. By the end of 2014, the Nigerian Stock Exchange was one of the worst performing exchanges in the world.

This perception may have been different if the survey was carried out pre-2007 global financial meltdown. In all, there are no significant movements in share prices to result into profit for investors. So, knowledge about the capital market or predictions in share price movements may not fetch a rational investor any significant returns. Also, the somewhat average application of the knowledge in model 2, may be traceable to the low activities on the exchange, since the possession of those knowledge does not strongly impact on returns (model 3). This agrees with the work of Olokoyo, Oyewo and Babajide (2014) that despite the gradual recovery of the capital market, investors still demonstrate low confidence in the market.

5. CONCLUDING REMARKS

The responsibilities for investors' education concerns all stakeholders in the capital market—the investors inclusive. Considering that all stakeholders and the Nigerian economy at large benefit collectively from a thriving capital market, we submit that all capital market players should play a part in enhancing capital market literacy.

Whilst acknowledging efforts hitherto made by SEC, NSE, CIS and other collaborating institutions towards investors' education, such activities could be stepped-up to achieve more results. Investors' education would be the key to correct the imbalance in the level of participation in capital market between local and foreign investors which is a fundamental issue confronting the Nigerian Capital Market.

Investor education could also bring about the reinvigoration of trading activities in the capital market, which has suffered decline since the financial straits that bedeviled the world economic systems in late 2007.

REFERENCES

Acquah-Sam, E., & Salami, K. (2013). Knowledge and Participation in Capital Market Activities: The Ghanaian Experience. *International Journal of Scientific Research in Education, 6*(2), 189-203.

Adamu, J.A., & Sanni, I. (2005). Stock Market Development and Nigerian Economy Growth.*Journal of Economic and Allied Field, 2*(2), *116-132.*

Aduda, J., Masila, J., & Onsongo, E. (2012). The Determinants of Stock Market Development: The Case for the Nairobi Stock Exchange. *International Journal of Humanities and Social Science, 2* (9), 214-230.

Afolake (2015) "Participate In Stock Market" – SEC, CIS, Urge Local Investors. Retrieved from http://bizwatchnigeria.ng/participate-in-stock-market-sec-cis-urge-local-investors/

Ajken, I. (1991). The Theory of Planned Behaviour. *Organisational behaviour and human decision processes, 50*, 179-211.

Ajzen, I., &Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour.*Englewood Cliffs, NJ: Prentice.Hall.

Akinsulire, O. (2010). *Financial Management*. Lagos Ceemol Nigeria Limited.

Barbara, O. & Jing, J. (2012). Financial Behaviours Before and After the Financial Crisis: Evidence from an Online Survey. *Journal of Financial Counselling and Planning,23* (1), 33-46.

Bell, E., & Lerman, I. R. (2005). *Can Financial Literacy Enhance Asset Building?* The Urban Institute No. 6. Retrieved from http://www.urban.org/UploadedPDF/311224_financial_literacy

Brigham, E. & Houston, J. (2013). *Fundamentals of Financial Management*. 13th Edition. CENGAGE Learning.

Brown, R. J., Ivkovic, Z., Smith, A. P., & Weisbenner, S. (2008). Neighbors Matter: Causal community effects and stock market participation. *The Journal of Finance, LXIII* (3). Retrieved from http://www.business.illinois.edu/weisbenn/RESEARCH/PAPERS/JF_Community_June2008_1509-1531

Brown, S., & Taylor, K. (2010). *Social interaction and stock market participation: Evidence from British panel data*. IZA Discussion Paper No. 4886. Retrieved September, 2015 fromhttp://papers.ssrn.com/sol3/papers.cfm?abstract_id=1595527.

Canary, D. J., &Seibold, D. R. (1984). *Attitudes and behaviour: An annotated bibliography*. New York: Praeger.

Central Bank of Nigeria. (2007). *Capital Market Dynamics in Nigeria: Structure Transaction cost and Efficiency 1980-2006*. Retrieved from CBN website: http://www.cbn.gov.ng.

Chandavarkar, A. (1992). Of finance and development: neglected and unsettled questions. *World Development Report, 20* (1). 1355-1342.

Daniel, K., Hirshleifer, D., & Subrahmanyam, A. (1998). Investor Psychology and Security Market under- and Overreactions. *Journal of Finance, 53*, 1839–1886.

Demirguc-Kunt, A., & Ross, L. (1996). Stock Market Development and Financial Intermediaries: Stylized Facts. *The World Bank Economic Review, 10* (2), 291-321.

De Santis, G. & Imrohoroglu, S. (1997). Stock Returns and Volatility in Emerging Financial Markets. *Journal of International Money and Finance, 16*, 561 -579.

Dhiraj, J. & Payal, T. (2012). Behavior of Investors in the Indian Capital Market – an Empirical Analysis with respect to Udaipur, Rajasthan. *International Journal of Management Sciences, 1* (2), 72-84.

Echekoba, F., Ezu, G., & Egbunike, C. (2013). The impact of capital market on the growth of the Nigerian economy. *Arabian Journal of Business and Management Review, 3* (2), 53-62.

Egene, G. (2015). SEC DG Stresses Importance of Investors' Education. Retrieved from http://www.thisdaylive.com/articles/sec-dg-stresses-importance-of-investors-education/181986/

Egwuatu, P. (2014). Stock market: Investors lose N3.23trn in 2014. Retrieved http://www.vanguardngr.com/2014/12/stock-market-investors-lose-n3-23trn-2014/#disqus_thread

Ekiran, O. (2000). *Understanding the capital market*. McGraw-Hill Publisher.

Emejo, J. (2015). SEC, CIS Seek Greater Local Participation in Stock Market. Retrieved from http://www.thisdaylive.com/articles/sec-cis-seek-greater-local-participation-in-stock-market/199822/

Esiedesa, O. (2015). SEC seeks to promote domestic investment with investors' education Retrieved from http://dailyindependentnig.com/category/business/

Garcia, F., & Liu, L. (1999). Macroeconomic Determinants of Stock Market Development. *Journal of Applied Economics, 2* (1), 29-59.

Gerschenkron, A. (1962). *Economic backwardness in historical perspective: A book of essay*. UK: Cambridge and Harvard University Press.

Goldsmith, R. W. (1969). *Financial structure and development*. New Haven: Yale University Press.

Guiso, L., & Jappelli, T. (2004). Awareness and stock market participation. Centre for Studies in Economics and Finance (CSEF) Working Paper No. 110. Retrieved October 2015 from http://www.csef.it/WP/wp110

Iyola, M.A. (2004). *Macroeconomics: Theory and Policy* (Revised edition). Mindex Publishing

Kolapo, F.T., & Adaramola, A. O. (2012). The Impact if the Nigerian Capital Market and

Economic Growth 1990-2010. *International Journal of Development societies, 1* (1), 11-19.

Kosgei, B., Joel, T., Kibet, B., & Kosgei, C. (2014). Factors Influencing the Development of Capital Markets in a Developing Economy: A Case Study of Nairobi Securities Exchange in Kenya. *European Journal of Business and Management, 6* (16), 52-60.

Levine, R. & Zervous, S. (1996). Stock Market Development and Long run growth. *The World*

Bank Economic Review, 10(3), 323-339.

Lusardi, A., & Mitchell, S. O. (2008). *How much do people know about economics and finance?* Financial illiteracy and the importance of financial education. Policy Brief, No.5, University of Michigan Retirement Research Center. Retrieved from

http://www.ftc.gov/be/workshops/mortgage/articles/lusardimitchell_um2008.

Mary, J., Adedinran, S., & Elizabeth, A. (2012). Capital market as a veritable source of development in Nigeria economy, *Journal of Accounting and Taxation,4*(1), 7-18.

Mohammed, I. (2012). Towards Effective Regulation of Capital Markets. Retrieved from http://www.nigeriaintel.com/wp-content/uploads/2012/08/SEC-Abuja1.jpg

Nwankwo, G.O. (1988). *The Nigeria Financial System*. Macmillan Publishers Ltd.

Okanlawon, J. (2014). Investors' education on capital market stands at 16% – Report. Retrieved from http://nationalmirroronline.net/new/investors-education-on-capital-market-stands-at-16-report/

Olokoyo, F., Oyewo, B., & Babajide, A. (2014). Attitude of Investors to Capital and Money Market Investments Before and After Financial Crisis: Evidence from Nigeria. *International Journal of Sustainable Economies Management, 3*(1), 53-64.

Onuba I. (2015). We'll make the capital market vibrant again–DG. Retrieved from http://www.punchng.com/news/well-make-the-capital-market-vibrant-again-dg/#disqus_thread

Osaze, B.E. (2007). *Capital Market, African & Global*. Lagos: The BookHouse Company.

Osaze, B.E., & Anao, A.R. (1999). *Managerial Finance*. Benin City: UniBen Press.

Osinubi, T.S., & Amaghionyeodiwe, L.A. (2003). Stock Market Development and Long rungrowth in Nigeria. *Journal of African Business, 4*(3), 103-129.

Pandey, I. M. (2007). *Financial Management.* 9th Edition. New Delhi, India Vikas. Publishing house PVT LTD.

Rooij, V. M, Lusardi, A., & Alessie, R. (2007). *Financial literacy and stock market Participation*. National Bureau of Economic Research (NBER), Working Paper No. 13565, Retrieved from http://www.nber.org/papers/w13565n

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A metaanalysis of past research with recommendations for modifications and future research. *Journalof Consumer Research,* 15, 325.343.

Soyede, A. (2005). The Role of Capital Market in Economic Developments. *Securities Market . Journal, 6*(3), 6-14.

ThisDay (2015). SEC, CIS seeks investment education for indigeneous companies at Stock Market Retrieved from http://naija247news.com/sec-cis-seeks-investment-education-for-indigeneous-coys-at-stock-market/

Toloie-Eshlaghy, A., Maatofi, A., & Dankoub, M. (2011). Identifying and grading factors effective on people's participation in Iran's capital market using fuzzy analytic hierarchy process. *Research Journal of International Studies*. Retrieved September, 2015 fromhttp://www.eurojournals.com/international_studies

Vazakidis, A., & Adamopoulos, A. (2009). Stock Market Development and Economic Growth. *American Journal of Applied Science, 6*(11), 1933-1941.

Yartey, C.A., & Adjasi, C.K. (2007). *Stock Market Development in Sub-Saharan Africa: Critical Issues and Challenges*. IMF Working Paper No. 07/209.

APPENDICES

Appendix 1: Variable operationalization in research instrument

Theme	Variable Name	Operationalization in instrument
Capital market investors' education	INV_EDU	Q18, Q19, Q20, Q25
Knowledge about the capital market	*KNOWLEDGE*	Q8, Q9, Q12, Q13, Q15, Q16, Q17
Application of knowledge	APPKNOW	Q14, Q21, Q22, Q23
Level of returns received from the Stock Exchange	RETURNS	Q11
Level of investment in the capital market	*INVESTMENT*	Q5

Appendix 2: Reliability Statistics

Cronbach's Alpha	N of Items
.884	21

EVALUATION OF THE PERFORMANCE OF NIGERIA LOCAL CONTENT DEVELOPMENT: CHALLENGES, OPPORTUNITES AND STRATEGIES FOR SUCCESS

Chris AC-Ogbonna[1]

[1]Department of Economics, Veritas University, Abuja

E-mail
E-mail:acogbonna@gmail.com

ABSTRACT

Nigerian Local content Policy is viewed as the quantum of value added in the Nigerian economy through a deliberate utilization of indigenous human and material resources and services in the conduct of businesses in Nigerian without compromising quality, health, safety and environmental standards. It is aimed at reversing the dangerous trend that had crippled the growth of indigenous business and creating the opportunity for the emergence of a new business and economic climate through the initiatives of the Petroleum Technology Association of Nigeria (PETAN) in 1990. The advent of Local Content is a charge on the government to recognize the hitherto neglected role of indigenous business in the nation building, and the imperative need to protect their practices through repositioning the entrepreneurs as the engine of economic growth.The analysis that follows tries to discuss the journey so far since the establishment of the local content policy in Nigeria.The objective of the study is to evaluate the impact of the local content development in nurturing and sustaining a focused Local content performance in the Nigerian Economy while the significance of the study is to empower and improve the productive capacity of the local entrepreneurs in realizing the Millennium Development Goals. The assumptions of the study is that Nigeria cannot be proposing of becoming one of the leading twenty economies in the world by 2020, (vision20:20) when she lack the scientific knowledge, technological skills and scientific consciousness to stimulate production in the country. Local Content cannot be achieved without the active, prominent, conspicuous and passionate involvement of the indigenous entrepreneurs, being the creative risk-takers who are expected to convert the presently foreign-utilized resources in the economy into veritable local economic inputs using simple percentages and chi-square statistics to analyze the data collected. The study revealed that local content development is aimed at promoting local capacity utilization and the development of indigenous business in Nigeria. The explanation of the above result is that the implementation of the Nigeria content policy will deliver several benefits to Nigerians and aid in the speedy economic development of the Nigeria economy. The study recommends that these developments notwithstanding, the Nigeria government at all levels must design an implementation framework or mechanism to pursue the Nigerian Content Policy. There must be a very aggressive application of carrot and stick methodology to implement and achieve the policy.

Key words: *Evaluation, Performance, Local Content Development, Challenges, Opportunities and Strategies for Success*

1. INTRODUCTION

Nigerian local content policy is viewed as the quantum of value added in the Nigerian economy through a deliberate utilization of indigenous human, material resources and services in the conduct of businesses in Nigeria without compromising quality, health, safety and environmental standards. It is aimed at reversing the dangerous trend that had crippled the growth of indigenous business and creating the opportunity for the emergence of a new business and economic climate through the initiatives of the Petroleum Technology Association of Nigeria (PETAN) in 1990. The advent of Local Content is a charge on the government to recognize the hitherto neglected role of indigenous business in the nation building, and the imperative need to protect their practices through repositioning the entrepreneurs as the engine of economic growth in Nigeria.

In addition to value addition, long-term domiciliation and domestication of technology and resources are critical to the successful Nigerian content policy implementation. It is also applicable to a broad range of activities in the oil and gas value chain (Engineering, Fabrication, Procurement, Construction, etc) and support services such as Banking, Insurance, Professional services.

Local content is the contribution to any of the myriad of activities operations or input in the oil and gas extraction process which can be made by local contractors, or wholly owned Nigerian companies or by Nigerian registered companies in which Nigerians effectively own a majority of the equity (See Nigeria Energy Directory 2005).

The Nigerian Oil and Gas Industry Content Development Act 2010 (the "Local Content Act") was enacted to enhance local content in Nigeria's developing oil and gas industry. "Nigerian Content" is elaborately described as the "quantum of composite value added to or created in the Nigerian economy by a systematic development of capacity and capabilities through the deliberate utilization of Nigerian human, material resources and services in the Nigerian oil and gas Industry". Put simply, the main driver is to employ Nigerian skills and resources in local projects, creating jobs and deepening the local supply chain in all sectors of the Nigeria economy. (See NNPC Website)

The other central aims of the Local Content Act are to:

1. Develop indigenous skills across the oil and gas value chain;
2. Promote indigenous ownership of assets and use of indigenous assets in oil and gas operations;
3. Enhance the multiplier effect to promote the establishment of support industries.
4. Create customized training and sustainable employment opportunities.

The Local Content Act contains various provisions commonly found in developing-country petroleum sharing contracts, designed largely to ensure that a country's resources provide tangible benefits to the local population, and that projects have a positive and lasting legacy. Local Content Act provides that "Nigerian independent operators shall be given first consideration in the award of oil blocks, oil field licenses, oil lifting licenses and all projects for which contract is to be awarded in the Nigerian oil and gas industry, and requires that all international or multinational companies working through their Nigerian subsidiaries demonstrate that at least 50% of the equipment deployed for execution of work is owned by the Nigerian subsidiaries.

Responsibility for oversight and enforcement of the Local Content Act rests with the Nigerian Content Development and Monitoring Board (NCDMB), the goals being to ensure continuous and measurable growth of Nigerian content in all oil and gas projects, operations and transactions.

In May 2012, the NCDMB highlighted marine vessel utilization as an example of the success that the Local Content Act had already enjoyed; it estimated that an additional $1.8bn had been retained in the Nigerian economy due to indigenous companies operating certain specialized marine vessels, and that a further $1.5bn could be retained by application to other vessels too.

Local Content was 100 percent guaranteed in all businesses derived from the factors of production (land, labor, capital and entrepreneurship). For instance, before the influence of the petroleum Industry, business leaders and their institutions shaped the once envious economy of Nigeria.

But the petroleum Industry emerged with a zero percent local content that systematically eroded the evolutionary business environment, leaving the country with a dearth of entrepreneurship.

Consequently, the advent of petroleum has been perceived by the old school of thought as a disruptive and negative influence to the evolution of a viable sustainable national economy.

The petroleum industry has been the main source of revenue for the country for many decades but unfortunately, the country has not witnessed wealth creation emanating from petroleum. Prior to the petroleum economy, the economy of the nation was based on the aggregate production of the various communities who were mainly farmers and traders scattered all over the country. The economy was comparably strong at that time with quantifiable growth. The recorded successes were achieved through the business leadership. The business leaders were the community leaders who had protected and respected environments defined by boundaries for farming, trading and any other commerce.

However, the petroleum industry has its own characteristics. The bedrock of entrepreneurship is the oil services sector, which has been dominated by foreign firms for many years.

Despite all efforts and publicity given to Nigerian Content development, most companies operating in Nigeria are reluctant to accept and implement Nigerian Local Content directives thereby making Nigerian facilities to be operating below 20% capacity utilization. The Nigeria economy relies heavily on external sources for most of its human and material input.

The objective of the study is to evaluate the impact of the local content development in nurturing and sustaining a focused Local content performance in the Nigerian Economy.

The questions to be addressed by this study include

1. Since the inception of local content in 2010, has it reversed the dangerous trend that had crippled the growth of indigenous businesses in Nigeria?
2. What are the challenges in promoting higher participation of indigenous companies in nation building through local content development?
3. Has Local content added value to the Nigeria economy?
4. Has local content effectively utilized local human and material resources?
5. What are the implications of the decay of economic infrastructures and dearth of local technology in the local content development in Nigeria?
6. Has local content enhanced the development of Nigerian skills and resources in executing local projects and deepening the local supply chain in all sectors of the Nigeria economy?

2. THEORETICAL/EMPIRICAL FRAMEWORK

This study is based on the Endogenous growth theory propounded by Paul Romer and Robert Lucas, in the 1980s and 1990s. The theory contended that economic growth is primarily the result of endogenous and not external forces. Endogenous growth theory holds that investment in human capital; innovation and knowledge are significant contributors to economic growth. The endogenous growth theory also holds that policy measures can have an impact on the long-run growth rate of an economy. Growth does not slow as capital accumulates, but the rate of growth depends on the types of capital a country invests in which focuses on what increases human capital (e.g. education) or technological change (innovation). This model also incorporated a new concept of human capital, the skills and knowledge that make workers productive. Unlike physical capital, human capital has increasing rates of return. This model ties into bundles of training and skills development modules usually executed in parallel with technical, engineering or drilling

activities at the community level. In this case, contracts are usually reserved for contractors from the catchment areas; however, it could provide a good springboard to enter the industry particularly if you are from the local area where the projects are domiciled.

Countries all over the world, regardless of their position on the development spectrum, have pursued and continue to pursue policies that seek to promote and enhance national competitiveness and Nigeria therefore should be seen in this regard.

In the Oil & Gas Industry, several countries (Brazil, Norway, Malaysia, Indonesia, Japan, Singapore, Korea China, Holland etc) have all pursued extremely aggressive national content policies which have positively impacted on the industrialization and economic development of such countries. The recent notice issued by the National Content Development Monitoring Board (NCDMB) to operators requiring the reporting of Nigerian Content compliance relating to rigs being used in their operations hints that the NCDMB is keen to keep up the momentum, and that enforcement could be on the way. In the notice, the NCDMB stated that it would adopt measures to ensure that only rigs meeting the Nigerian Content requirements would be used in drilling campaigns, and that companies failing to comply with the requirements would be suspended from operating until their activities were brought into compliance. (See www.energylegalblog.com)

Emeka (2014) the Chief Executive Officer of Oil data Energy Services, and the Secretary of PETAN (Petroleum Technology Association of Nigeria) in a paper presented in Yenagoa Bayelsa State on the Local Content opportunities & value-preposition models for successful investment in the Nigerian oil service industry maintained that the Nigeria Content Law is so pivotal to capturing value from the rise in oil prices this past decade driven by the "insatiable" growth of the economies of China and India. Nigeria has a large working population of 53% and current GDP growth is 5.3% (our central bank puts it at 7.4%) with the economy based largely on the oil and gas industry. However, Nigeria's GDP contribution from domestic entrepreneurship in the oil industry is a paltry 5% (from oil services) compared with 54% (from ICT) in India. This suggests that Nigeria is virgin territory for local content and it is obvious that successful implementation of the new law can and should rapidly grow Nigeria's GDP. For example, a single EPIC contract for the design and fabrication of topsides required for an oil production facility domesticated in Nigeria, can generate over five million man-hours of engineering design work, employ over 300 electrical, mechanical and facilities engineers for over three years, deploy over 3000 skilled technicians, coded welders and fitters, not counting the hundreds of artisans, safety personnel, catering people and support staff gainfully employed. A contract like this will create a noticeable socio-economic impact

at the grassroots level, while generating value-added business for the investing parties. Such opportunities represent only the tip of the iceberg. In line with our existing endogenous growth theory, Emeka (2014) justified the theory thus: that the Collateral Social responsibility (CSR) model, which is tied to Education and technical skills development opportunities, which arise out of CSR initiatives by operating companies. This model ties into bundles of training and skills development modules usually executed in parallel with technical or engineering or drilling activity at the community level. Such contracts are usually reserved for contractors from the catchment areas; however, it could provide a good springboard to enter the industry particularly if you are from the Niger Delta area.

Emeka's (2014) paper is in line with the endogenous growth theory but did not emphasize need for local content to be implemented in other sectors. Because if the kind of value from local content in the oil and gas sector is collectively generated from the whole sectors of the economy, Nigeria would have become one of the most vibrant and productive economy in Africa with low inflationary rates and low level of unemployment.

In the Building and Construction Industries, Local Content Bill in the Building and Construction Industry was passed into law. The "Bill" which appears to be based on the Nigeria Local Content Act would widely impose Nigerian Content requirements on construction projects. Whether it will survive in its current form is unclear, but the intention and trend are quite evident. And, set alongside the results of the local content drive to date, it is easy to see why Nigeria is keen to keep pushing.

NCDMB (2014) estimated that the implementation of the Local Content Act had attracted $5bn worth of investments into the country and created around 38,000 jobs. Added to the growing value of the Nigerian Content Development Fund (established under the Local Content Act, and collected from one per cent of all contracts awarded in the upstream oil and gas sector), used for guaranteeing lending to Nigerian service companies and for infrastructure and training investment by the NCDMB, which reached $350m at the end of the year, the tangible benefits of the strong local content policy are significant. With Nigeria stepping up its efforts to further boost the local economy and ensure that value from projects is captured in-country, and with the NCDMB reporting requirement as the first stage of a potential enforcement program, this is a critical time for international companies operating in the country to understand that it is not going to be business as usual.

Given the fierce penalties for non-compliance, international operating companies should be careful to ensure that they closely monitor publications from the NCDMB and that they remain compliant with Nigerian Content requirements in all aspects of their operations.

The researcher observed that since the inception of the NCDMB, the monitoring board has not mentioned any defaulting company and actions taken in order to serve as deterrent to other foreign companies operating in Nigeria and yet the policy is full of praises.

Heum et al. (2003 and quoted by *Ugwushi Bellema Ihua 2010*) summarized the reasons for low local content development to include low technological capacity; lack of funding from financial institutions; inadequate and incoherent policies/legislations; inadequate infrastructure; unfavorable business climate; lack of partnership between indigenous contractors and technically competent foreign companies.

This paper agreed to a large extent with Heum et al. (2003 ,and thus, low local content development has negatively affected the development of this policy in other sectors.

Okolo (2005) said that the "Norwegian government made a deliberate effort to build a local Norwegian oil and gas industry through strict implementation of the local content policy. It is a carrot and stick approach whereby companies which comply with the policy are given the carrot by way of tax incentives and awards of new projects and oil blocks. Some upstream oil companies (IOC's) are reluctant to accept Nigerian Content directives issued by NNPC and perhaps hope that this will be one of those 'phases' that will soon pass and that most Nigerian facilities are still operating under 20% capacity utilization, our fabrication yards are empty and waiting for job order while about 70% of job given to Nigeria companies are executed overseas. On the other hand, violators are descended upon with the stick, sometimes culminating in the revocation of the operating licenses of such companies by the government".

Okolo (2005) did not mention if monitoring board has effectively supervised the content policy in line with the terms of reference given.

Warner (2007) examined local content from an angle of 'community content'; stating that 'Ultimately, community content is about realizing a competitive advantage for an oil and gas development company in the eyes of both the local population and the country's guardians of economic policy.' Warner (2007) observed two distinct policy strategies for achieving higher local content vis-à-vis: firstly, where the state requires oil companies to give greater preference to those nationals and national suppliers who can compete internationally on cost, quality and timeliness. This policy is implemented through negotiated conditions and agreements between host countries and multinationals evidenced by issues such as lower pre-qualification and tender appraisals criteria and lower tariffs on imported machinery and semi-finished materials not available in the country. For instance, the Trinidad and Tobago case, where oil production operators shall give preference to national subcontractors where such are competitive with foreign bidders in skills,

availability and price and meet technical and financial requirements and the case in Nigeria where the proposed Local Content bill requires about 95 percent managerial and supervisory positions, 100 percent risk insurance and legal services to be handled by indigenous professionals.

The second policy strategy is where governments propose a "step change" i.e. gradual change of Local Content capacity achieved by consciously building the capability of national and local skills to access opportunities, considered as 'local capability development. It can be argued that while the former strategy can be considered more of a "Push" model; the latter is more of a "Pull" model; and that the latter model is a potentially more progressive model that would involve considerable undertakings from the oil companies such as providing direct and prolonged assistance to indigenous firms to improve their quality and reliability; payment of premiums or subsidies to overcome some of the higher costs incurred in capacity development; payment of additional insurance premiums to support local suppliers and contractors; investing in physical infrastructure such as buildings and utilities; and providing financial services such venture capital, credit guarantees and short-term loans to local suppliers and contractors. Warner (2007) further stated that 'we should not be so naïve as to expect changes in local content and community investment practices to occur in the absence of the right dedicated incentives.'

Warner (2007) went further to cite examples of success stories of local content policy development with the Korean big 4 firms Daewoo, Hyundai, Samsung, LG (formerly Lucky Goldstar) are the most visible beneficiaries of this programme implemented during 1960's to 1980's. It was a comprehensive Korean Content Programme that saw the emergence of Korean capability in a broad range of economic and industrial activities. The researcher agreed with the author that the content programme that was developed and implemented by the Korean government fast tracked economic development in their country and it is in line with our endogenous growth theory. This approach made Korea to become one of the highly industrialized countries in the world and classified as one of the ASCEAN Tigers in the world. The three criteria for winning bids in Brazil are Signature Bonus, Local Content and Work Programme Commitment. Of the three however, local content had the highest weight allocation of 40 percent while the remaining 60% is shared between remaining two. The percentage of local content in the oil operations in the State of Rio is 75%

This paper observed that while the latter model appears more progressive, it is worth considering that the multinational oil companies are not charity based-firms; but strictly profit-oriented organizations, driven by the main objective of maximizing shareholders funds. Therefore, the model suggested by Warner may be difficult to implement in Nigeria, where her

recent experience from the issues of gas flaring prohibition has displayed laissez-faire attitude on the part of the multinationals and ineffective regulation from the authorities, over invoicing, corruption and lack of political will to effectively implement the policy. We therefore suggest an effective Local Content policy that would be driven by an optimal balance of both incentives and strict regulations.

Pedro (2003), Managing Director, Weltek Limited and Chairman Petroleum Technology Association of Nigeria, said that local content starts with an individual or group of people who are desirous to building an entrepreneurial company. An entrepreneurial company is one that can survive irrespective of difficulties occasioned by lack of local content. The strategies for the development of local content, challenges and opportunities varies from company to company, but generally, import trading, licensing, subsidiaries, and international joint ventures are recommended. Government has been charged to pass the local content bill into law, and review business laws that will enhance the development of Local Content in Nigeria. Obviously, the absence of the State constitutions and (City and Villages) Ordinances in the present day Business Law creates a vacuum to the development of local content and should be addressed urgently.

Pedro (2003) did not identify the carrot and stick approach that could be adopted to achieve the programme if the government really wants the policy to succeed when passed into law.

Osamede (2014) Unlike other policies in the oil and gas sector of the economy, the implementation of the Nigerian local content policy of President Goodluck Jonathan is setting new pace in the creation of local players and economic activities, including the proposed $150 million oil and gas industrial parks. The proposed park, with the capacity to create oil and gas manufacturing companies in the chosen states of the Niger Delta region, is set to kick-start its first phase, with $10 million in terms of training of about 47 youths and zonal coordinators from the zone and the setting up of a self-growing organic system for businesses and investments.

In the unveiled plan for the proposed oil and gas industrial parks, the facilities will be located in three zones including Akwa Ibom/Cross River zone located along the Calabar industrial layout, the Imo/Abia zone located at Oguta community with 25 hectares of land provided for the project. The researcher understands that most of the local content initiatives are directed towards developing the oil and Gas sector and is in line with our existing endogeneous growth theory, but much is not been said and done towards using this policy to develop other sectors of the Nigeria economy.

Ugwushi (2010) carried out a study on local content policy and small and medium scale enterprise's (SMEs) Sector Promotion in the Nigerian Oil Industry. Ugwushi (2010) used multiple case studies and simple percentages

in the study. His findings revealed that the local content policy has resulted in increased contract awards to the companies such as the existing small to medium-sized firms; however, this cannot yet be considered higher SMEs participation, because it only led to increased contract awards to existing companies, without significantly enhancing the participation of new entrants into the industry, as described by the key informants. Notwithstanding this finding, all the case companies and key informants believe that the capacity of indigenous firms remains hugely underutilized, and that more still needs done to promote higher participation of new entrants; because the industry is still dominated by foreign firms handling projects which could ordinarily be undertaken by local firms. As one of the key informants stated: "It is not enough to say that because existing indigenous companies are now getting a few more contracts solves the local content issue. It is far deeper than that. There are far more projects that can still be handled by indigenous firms that are not yet being handled today, instead they are given to foreign firms." Additionally, and with respect to the high rate of unemployment experienced in Nigeria, it is expected that the oil and gas sector would help create job opportunities for the unemployed, especially youths from the oil producing Niger Delta region. Therefore, the slight increase in contract awards to existing indigenous firms cannot be viewed as significant enough to help in curbing the gross unemployment issues in the country. Government needs to further encourage the local production and fabrication of required materials and equipment in Nigeria.

This paper agreed with Ugwushi (2010), much is yet to be done especially in ensuring that this local content policy adds value in the economy through other sectors.

Jean (2009) in a paper titled "Nigerian Local Content: Challenges and Prospects" presented at the annual conference of the International Association for Energy Economics pointed out that Government's objectives for the local content policy initiative are quite noble but have remained un-realized. These objectives include the expansion of the upstream and downstream sectors of the oil and gas industry, the diversification of the sources of investment into the sector such that some of the funds would begin to come from local sources, the promotion of indigenous participation and the fostering of technological transfer. Other objectives are the increase in oil and gas reserves through aggressive exploration; employment generation for all categories of Nigerians; increased production capacity, and perhaps most importantly, the integration of the oil and gas industry into the mainstream economy through local refineries and petrochemicals. The researcher observed that the author did not critically outline the key challenges affecting the realization of the policy.

According to a report published in Business Day (2008) and quoted by Ugwushi (2010, it was reported that an estimated $8billion is spent annually on servicing operations within the industry and this figure is projected to hit $15 billion within the next few years Regrettably, despite these huge sums of money spent in servicing the industry, only very little proportion of the accruable profit is available to indigenous oil servicing firms or spent in developing Nigeria's industrial base. Majority of the amounts are paid to foreign firms for services such as Fabrication, Engineering Procurement Construction (EPC), Front End Engineering Design (FEED), conceptual designs and seismic studies. This results in capital flight as the profits from the contracts are repatriated abroad, where most of the equipment are manufactured; thus providing employment opportunities for citizens of other countries, and in most cases developed countries.

According to industry experts, the main reason for this situation is attributed to the problem of low local content, which is a situation where most of the service contracts are awarded to foreign firms because local indigenous firms 'allegedly' lack the requisite skills, technical expertise, manpower and production capacity and capability to compete favorably. The researcher discovered that this policy can effectively work if Nigeria develops the political will to implement the policy, otherwise most Nigerians in managerial positions will sabotage the programme by conniving with foreign firms to satisfy the personal interest and rubbish the policy.

In summary, the work reviewed so far are the works of many individuals who have been touched by the Nigeria Local Content Development and have therefore shown concern in this area of study. It was observed from the works of these various authors that the Nigeria Local content development was meant o develop and enhance the capacity of Nigerians. Much study has not been done on the impact of this policy on other sectors of the Nigeria economy which therefore created the gap of this study. The need to close this gap claims the attention of this study. The most reoccurring term in the works reviewed were poor infrastructure, corruption, lack of political will, absence of long-term capital finance from banks and general insecurity are the key challenges affecting the success of local content in Nigeria. In attempting to fill this gap, the endogenous growth theory was justified to be adopted in making the policy a success in line with the literatures reviewed.

The hypothesis of this work is that local content development has not enhanced the employment of local skills and resources in executing local projects in Nigeria.

Review and Analysis of the Nigerian Local Content Development

Since the inception of the Local Content Policy and its passage into law by the National Assembly in 2010, the Federal Government has been very critical in driving the progress so far with the establishment of the Nigerian Content Division within the Nigerian National Petroleum Corporation (NNPC) and directives issued to upstream Oil and Gas operators on implementation of Nigerian Content Policy. The resolve of the government in this matter began with an NNPC and National Petroleum Investment Management Services (NAPIMS) committee, set up in 2001, to articulate all the views of stakeholders on a local content policy for the industry.

The NNPC/Chevron Joint Venture also organized a local content workshop to support government's position. Following this commitment, the identification of jobs specified for local indigenous contractors with proven capability are being reserved for them as a way of promoting indigenous participation. This applies to all contracts within Joint Venture and production sharing contract arrangements and must pass the local content requirement in the projects design before it receives approval of NNPC/ NAPIMS.

In its commitment to raise the percentage of local participation in the oil sector, NAPIMS initiated indigenous partnership with multinational service companies, by packaging services in modules to ensure that some jobs were reserved for competent indigenous companies e.g. shells E A Field Project.

In the prequalification exercises, NAPIMS makes sure that companies comply with basic requirements with proof of evidence in areas such as company incorporation and financial resources, local content policy and implementation; it has also instructed that at least 40% of any contract must be up of local content. "NAPIMS requires that prior to the opening of bids, Production sharing contract and Joint venture Operator shall submit, proposed bid evaluation criteria for approval" as prequalification guidelines for award of contracts.

Since 1999 when Chevron and Texaco, set up a special unit to co-ordinate its local content development plans and initiative, it has recorded many achievement.

On August 7, 2000, the first-ever Marginal Field Agreement in Nigeria' oil and gas industry was signed in Abuja. The historic agreement between Chevron Nigeria Limited (CNL) and its joint Venture Partner, the Nigerian National Petroleum Corporation (NNPC), on the one hand, and an indigenous oil company, Niger Delta Petroleum Resources Limited (CNL) and its joint Venture Partner, the Nigerian National Petroleum Corporation (NNPC), on the one hand, and an indigenous oil company, Niger Delta Petroleum Resources Limited (NDPRL), formally farmed out the joint Ventures Ogbelle Field to NDPRL. The field, located in Nigeria's oil Mining Lease (OML) 54, was discovered by Chevron in the 1980's.

In 2001, Chevron Nigeria Ltd awarded drilling jobs worth over $24 million to eight indigenous oil service companies. The firms were selected through a competitive bid process in which a number of foreign companies also participated. The contract was won by the Nigerian companies on the strength of their individual evaluated technical competencies. The scope of their contracts cover casing and tubing running, filtration, direction drilling, jar rental and service cementing. In the same exercise, two other local companies got sub-contracts that would be executed in partnership with a company. Chevron Nigeria Ltd has also initiated an alliance between one of its foreign oil service companies, Schlumberger, and an indigenous company, Water OIL and Gas Limited (WOG), with the aim of developing WOG into a world class directional drilling Service Company.

Similarly, the company initiated a working partnership between ABB and the Nigerian Engineering and Technical Company (NETCIO). The objectives are to transfer world class design office procedures and practices to the NETCO staff through a combination of on the job training and instruction. Within the same year under review, Chevron Nigeria Ltd awarded a three year contract for the fabrication and load-out of standard offshore well platforms to Trans coastal Nigeria Limited, an oil service company fully owned by a Nigerian business group. Trans coastal won the $12 million contract in a pre-qualification exercise and competitive bidding process that included seven other contractors. Within the three year period, from August 1, 2001 to July 30, 2004, Trans coastal will provide personnel, equipment and all consumables to fabricate, coat, and load out fabricated structures. The company has already been called out for the fabrication of four helpdesks in the Chevron Nigeria Ltd operated Isan field, using locally sourced materials. Chevron Nigeria Ltd is providing all structural materials and pipes associated with the various scopes of work.

Over the years Chevron Nigeria Ltd has offered most of its painting work, through a competitive bid process, to oil and Industrial Services (OIS). Their projects have included painting and various offshore jackets and productions platforms. The support given by Chevron Nigeria Ltd over the years has allowed OIS to establish a solid knowledge and equipment base on which they can expand their business. The company has now purchased vessels, scaffolding and other necessary painting and equipment that enable it to execute large-scale jobs effectively.

As part of its contribution to the promotion of indigenous enterprise and technological excellence in Nigeria's oil industry, Chevron Nigeria Ltd recently partnered with a local company the vision Reservoir Management Technologies International (VRMT) to set up Nigeria's First Advanced Technology Centre for Subsurface Studies.

The state of the Art Centre which is located in Lagos is designed, among other things, to conduct high end technical studies including geo statistical reservoir modeling and compositional fluid flow simulation, reserve audits, improved reservoir characterization and horizontal well performance audits. In addition, it offers services in production nodal analysis and mitigation plans, micro- level reservoir simulation for optimum reservoir management, as well as oil and gas field development models. The research facility brings high end technical expertise to operating companies by providing improved and cost effective solutions to reservoir management challenges in the industry. The availability of this facility in Nigeria according to the Managing Director of Chevron Nigeria Limited will lead to further technological excellence in the countries oil industry and significant foreign exchange savings to the nation.

Other important aspects of local content development and capacity utilization in which Chevron Nigeria Ltd has also made significant progress are technology transfer and the training of Nigerians.

The implementation of Nigeria Content directive has assumed a very high priority within NNPC and significant progress has been made to date as reviewed above. The review and analysis is in line with our proposed theory.

Challenges of Nigerian Economic Development

The concept of Economic development has continued to excite modern economic theorists and policy makers with enormous difficulties in arriving at a consensus. This difficulty in conceptualizing development in concrete terms led Meier (1984) and cited by Chris (2014) to opine that it is easier to say what development is not (than to say what it is); while many scholars believe that any attempt to give development a universalistic definition will amount to "scholastic pedantry"

Economic Development is the structural transformation of an economy into a high level of industrialization, higher standard of living, high per capital income per head, low level of poverty and unemployment among other indictors of development.

Within this framework, Nigeria is rated one of the less developing countries with slow progress in education, gender equality, income equality, employment generation, wealth creation and high poverty rate as well as slow growth in technological advancement. Development is a very difficult concept in which various government agencies, United Nations, Donor agencies and development partners etc have labored and invested huge sums of money in trying to find out ways of addressing development challenges especially in third world countries.

The key function of government is to protect and promote the welfare of its citizens. In doing this, Government must choose the economic approach to

pursue. It may, for instance, decide to pursue a control economic approach, a free market economic approach or a synthesis of both. Whichever one it decides to pursue is determined by the social, political and international politics of the time. Despite the extensive use of the above policies, very little progress has been made towards the achievement of the nation's economic objectives especially at the state and local government level where the governance and democratic dividends are made to be brought before the door steps of the common man. One possible way of understanding this lack of progress is by examining or evaluating the performance of the impact of the local content development in nurturing and sustaining a focused Local content performance in the Nigerian Economy and enhances the productive capacity of the local entrepreneurs.

Chris (2014) pointed out that Nigeria cannot in any way achieve speedy economic development and dream of becoming one of the leading twenty economies in the world by 2020, (vision20:20) when she lack the scientific knowledge, technological skills and scientific consciousness to stimulate production in the country, with a slow growths in education, gender equality, income equality, employment generation, wealth creation and high poverty rate.

Despite Nigeria's ever growing profile and wealth, the World Bank (2014) classified Nigeria as one of the poorest country in the world, where her citizens are living on less than US$1.25 per day determined by the purchasing power parity rate, which would look at how much local currency is needed to buy the same things that a dollar could buy in the United States. Usually, this would translate to less local currency than the exchange rate in poorer countries as the United States is a relatively more expensive country.

Technologically, Nigeria is backward. This is basically because the much taunted wealth has not translated into improved welfare. One reason for this is that over 90 percent of the yearly industry expenditures escape the domestic economy as capital flight through conduit pipes laid by foreigners doing business in Nigeria.

This paper, from an interaction with industry stakeholders, found that:

(a) over 70 percent of the contracts awarded to Nigerian companies are executed overseas, thereby defeating the primary objective of Nigerian content development which is to develop the local capacity by executing contracts in Nigeria using Nigerian local resources. Today, most Nigerian facilities are still operating under 20% capacity utilization.(See Okolo 2005).

(b) Inadequate think tank through weak institutional capacity is also a critical challenge standing against enhancement of local skills and capacity development.

(c) Lack of political will to implement policies and carry through change.

(d) Policy inconsistency in government.
(e) Absence of access to long term capital finance from banks,
(f) Poor infrastructure,
(g) Corruption
(h) General insecurity

The implication of all these is that the future of the Nigerian people is currently being controlled by foreigners whose main objective could be to post better returns on investment.

Opportunities

Agriculture was the dominant sector of the economy, contributing about 70% to the Gross Domestic Product (GDP), employing about the same percentage of the working population, and accounting for about 90% of foreign earnings to Nigeria. The early period of post-independence up until mid-1970s saw a rapid growth of industrial capacity and output, as the contribution of the manufacturing sector to GDP rose from 4.8% to 8.2%. This pattern changed when oil suddenly became of strategic importance to the world economy through its supply-price nexus. (See CBN website).

Nigeria has been an oil and gas producing nation for over 50years, the various stakeholders in the upstream sector are yet to make any significant impact on Nigeria's economic development beyond the conventional crude oil sales revenue and related taxes. Economic growth has gone hand in hand with agricultural progress. Stagnation in agriculture is the principal explanation for poor economic performance, while rising agricultural productivity has been the most important concomitant of successful industrialization (See Ugwushi 2010*)*

Economic development is the search for value addition and not only physical manufacturing. As we seek to develop our local skills and fabricate items locally, we must equally seek to develop global quality procurement and logistics management capability and we must seek to domicile and domesticate procurement services in Nigeria.

The full implementation of Nigerian Content Policy covering the entire sectors of the Nigeria economy could add value to the Nigeria economy through the following measures.

a. Economic growth is the increase in the value of goods and services produced with the assistance of all the factors of production resident in the territory of a country. Economic growth either in policy design or implementation has, however, been accorded marginal attention in Nigeria. Evaluation of the plans has often emphasized the growth criterion with limited consideration for social equity in general, and the poverty issue in particular. A major increase in the value of Nigerian

content will positively affect Nigeria's GDP growth by as much **10%** per annum. Given our desire for accelerated economic recovery in Nigeria, full implementation of the Nigerian Content Policy represents a viable route to Nigeria's speedy economic recovery.

b. Increased Nigerian Content initiatives will create substantial direct new job opportunities. Our findings from the literatures reviewed revealed that every US$1bn local Fabrication and Construction work creates 20,000 new jobs per annum. Therefore full implementation of Nigerian Content Policy even extending the policy into other sectors of the economy will generate more than 2,000,000 new jobs for Nigerians annually (See Okolo 2005).

c. Technology is a key component of development. It will support other industrial development particularly providing engineering and technical manpower, Plant and Machinery and chemicals to other sectors.

d. The long term sustainability and domiciliation of skills, materials and resources required for the operation in Nigeria industries is a major National Security Issue. It is only through aggressive implementation of Nigerian Content Policy that Nigeria can manage any possible future threats in international relationship that could constraint flow of resources to the Nigeria economy.

Strategies for Success

Since the inception of the local content policy in Nigeria and series of efforts made in the last four years towards increasing local content input in the oil and Gas industry, it has had very limited effect on the other sectors of the Nigeria economy. The oil and Gas industry is not the only sector that could enhance the gross domestic product (GDP) stimulates development in Nigeria but the active participation of all the sectors in Nigeria could seriously speed up development.

Federal Government through its various Ministries/Agencies should continue to implement actions to support local content in all the sectors in Nigeria through the following measures.

a. Nigerian Content Act should have full Legislative and Administrative Backing from the government with extension to other sectors of the Nigeria economy. All Directives issued by Nigeria Content Development and Monitoring Board (NCDMB) should be streamlined to cover other sectors of the economy and not restricted to oil and Gas sector alone. These directives should receive full legislatives and federal Executive Council backing with periodic reporting and feedback mechanism in order to ensure compliance with government directives.

b. The Nigeria Content act should have legislative backing to protect and rewards cost saving, for indigenous operators and cost monitoring for multinationals that operate as cost partners of indigenous companies.

c. Import Duties on raw materials for equipment fabrication in Nigeria should be lower than duties on finished imported equipments. The current situation penalizes local fabrication. While the average duty on imported finished equipments for Oil and Gas Industry averages 10% - 15%. Key raw materials for the manufacturing of such equipments attract significant higher duties e.g.

Welding Electrodes	70%
Steel Sheets and Plates	15%
Steel Sections & Pipes	40%
Valves	15%

Nigeria Content Development and Monitoring Board should develop a comprehensive data base of all equipments that can be fabricated in Nigeria.(See Okolo 2005)

d. Research and Development should be developed in order to provide data for analysis of value added in Nigeria for all projects executed in the country

e. Nigeria Contractors could pull their resources together to form strategic alliances, merger and partnership so as to be competitive in the industry. Though we know Nigerians don't like to form alliances for lack of trust and transparency, but this will make them stronger and reduce the rate of capital flights from the foreign businessmen operating in Nigeria.

f. The financial sector should be more proactive in funding businesses in Nigeria, by taking advantages of abundant opportunities in the Nigeria economy. They financial sector should try and attract international capital into their portfolio for on lending to other sectors of the Nigeria economy.

g. Periodic dialogue through Conferences, workshops and seminars should be organized for the indigenous entrepreneurs, government and the financial sectors where challenges and the ways forward could be discussed and solutions proffered.

3. METHODOLOGY

This study used the political economy method by examining both economic and relevant non-economic influences in our subject taking into account some historical factors in our investigation. The study employs survey method by obtaining through the use of questionnaires. The respondents include

indigenous contractors, members of staff of oil and gas industry and other stakeholders in the oil industry. The survey method gives us direct response and first hand facts from practitioners in the field.

The data collected will be presented in tables. Descriptive, judgmental and statistical modes of analysis will be utilized involving the use of simple percentages and chi square statistics.

Table 1 shows that 100 questionnaires were administered and 100 were received representing 66⅔% response rate.

Table 1 Sample size showing category of respondents

Category of staff	Number of questionnaire distributed	Number of questionnaires received.
Oil and Gas industry	50	35
Local Contractors	50	35
Others	50	30
	150	100

Source: Field Survey data 2014

4. DATA PRESENTATION AND ANALYSIS

In analyzing the data, information collected from field survey are presented, analyzed and interpreted. The method of analysis adopted is the simple percentages and chi square statistics as earlier stated in our methodology.

Question1. Local Content Policy

Since the inception of local content policy in 1990, has it reversed the dangerous trend that had crippled the growth of indigenous businesses in Nigeria? Respondents were asked whether the old system of doing business in Nigeria has changed.

Table 2 Number of responses on local content

Staff Responses	**No of respondents**	**Percentages**
Oil and Gas Staff	30	31.5
Local Contractors	35	36.8
Others	30	31.5

Total	95	99.8

Sources: Sample survey data 2014

Table 2 shows that the respondents gave an affirmative answers that local content has reversed the old thumb of doing business in Nigeria especially in the oil and Gas sector with 36.8% response from the local contractors while the oil and Gas staff as well as the general public had 31.5% response on the local content respectively.

Question 2. Higher Participation

What are the challenges in promoting higher participation of indigenous companies in nation building through local content development? The respondents were asked whether certain challenges have affected higher participation by local contractors.

Table 3. Approximate numbers of responses on the participation of indigenous contractors on Local Content Policy

Staff Responses	No of respondents	Percentages
Oil and Gas Staff	35	35
Local Contractors	35	35
Others	30	30
Total	100	100

Source: Sample survey data 2014

That 3 shows that 100% of the respondents agreed that certain challenges are seriously affecting the Policy from adding real value to the economy. They attributed such challenges to insecurity, corruption, lack of enforcement and implementation of the policy, infrastructural decay among others.

Question No 3. Quantum Value to the economy.

The respondents were asked how Local content has been able to add value to the economy since it was passed into law.

Table 4: Number of responses on value creation

Staff Responses	No of respondents	Percentages
Oil and Gas Staff	35	58.3
Local Contractors	25	41.7
Others	-	-
Total	60	99.9

Source: Sample survey data 2014

58.3% agreed that the local content has created and added value to the economy especially in the areas of job creation, development of local skills and infrastructure among others in the oil sector while the local contractors had 41.7% response on value creation. No response came from the general public. This is an indication that other sectors of the Nigeria economy is yet to feel the impact of local content. In a nutshell local content has added value to the economy but efforts should be made to extend the implementation of the policy to other sectors in Nigeria as this will certain double the Goss Domestic Product (GDP) of the Nigeria economy.

Question 4. Utilization of Local Human and Material resources

Has local content effectively utilized local human and material resources in Nigeria?

The respondents were asked if local content in the economy has effectively utilized the abundant human and material resource potentials.

Table 5: Number of responses on resource utilization

Staff Responses	No of respondents	Percentages
Oil and Gas Staff	35	35
Local Contractors	35	35
Others	-	-
Total	100	70

Source: Field Sample Survey 2014

Table 5 shows that the responses were positive from 70% of the respondents out of which 35% represent staff from the oil and Gas sector which represents 70% of the total staff of the oil and gas industry that participated in the survey. However, the general public made no response on this aspect. This is an indication that most companies do not recognize and trust on the local skills and manpower. In a nutshell local content somehow utilizes the human and material recourse potentials in the economy but limited to the oil and gas sector.

Question 5. Local Technology

The respondents were asked if dearth of local technology has a negative impact on local content development in Nigeria

Table 6 Number of responses on Technological endowment

Staff Responses	No of respondents	Percentages
Oil and Gas Staff	35	35
Local Contractors	35	35
Others	30	30

Total	100	100

Source: Field Sample Survey 2014

Table 6 shows that 100% of the entire respondents agreed that dearth of local technology affects the smooth actualization of the local content policy. This is a clear indication that we lack the scientific knowledge, technological skills, scientific consciousness and institutional technology to develop our economy.

Question 6 Development of Local Skills

The respondents were asked if local content has enhanced the development Nigerian skills and resources in executing local projects and deepening the local supply chain in all sectors of the Nigeria economy.

Table 7 Number of responses on Development of Local Skills

Staff Responses	No of respondents	Percentages
Oil and Gas Staff	35	43.75
Local Contractors	30	37.5
Others	15	18.75
Total	80	100

Source: Field Sample Survey 2014

Table 7 shows that 43.75% of the respondents especially those from the oil sector where the policy was first introduced agreed that local contents have developed the local skills of Nigerians. 37.5% of the respondents also agreed with the achievement of the policy so far but a paltry 18.75% which constitute the people from the other sectors whose potentials have not been tapped and utilized disagreed with the achievement of the policy so far. This is an indication that a lot need to be done to make the policy universally acceptable policy to develop local skills.

Hypoothesis Testing

H_1 Local content development has not enhanced the productive capacity of the Nigerian economy

If under the empirical hypothesis testing, the computed value of chi-square (X^2) is greater than some critical value (X^2_u) at a given level of significance and degree of freedom, we would conclude that there is a significant difference between the both samples and would therefore reject the null hypothesis (H_o) and accept the alternative hypothesis (H_a) or vice-versa.

$X^2 > X^2_u$ = Reject Ho: null hypothesis

$X^2 < X^2_u$ = Accept Ha: Alternate hypothesis

The chi -square (X) is given as as follows:

$$X^2 = \sum_{i=1}^{n} \frac{(f_{io} - f_{ie})}{f_{ie}} \qquad (1)$$

where fo = observed frequency for variable i
fe = expected frequency for variable i
n = total number of variables

The data to test the hypothesis was derived from the sixth question in questionnaire distributed. It shall be analyzed and tested using the chi-square statistics.

Table 8 ***Contingency Table***

Responses	f_o	f_e	$(f_o - f_e)$	$((f_o - f_e)^2$	$(f_o - f_e)^2/f_e$
Oil and Gas	35	43.75	-8.75	76.5625	1.75
Local Contractors	30	37.5	-7.5	56.75	1.51333
Others	15	18.75	- 3.75	12.75	0.68
Total					3.94333

$X^2 = 3.94333$
Testing at 5% level of significance and degree of freedom
= 0.05
$X_u^2 = 3.84$

Discussion of Findings
From the analysis of the questionnaires and personal observations of the researcher, it is obvious that the calculated chi-square (X^2) is greater than the theoretical or critical (X_u^2) value of 3.84.

$X^2 > X^2_u$
$X^2 = 3.94333 > 3.84$

We therefore reject the null hypothesis which says that local content development has not enhanced the productive capacity of the Nigerian economy and accept the alternate hypothesis which says that local content development has enhanced the productive capacity of the Nigerian Economy.

5. SUMMARY AND CONCLUDING REMARKS

In summary, this study has critically examined the Nigeria Local Content Development and observed that it is purely the right policy reform that could enhance the productive capacity of the Nigeria economy if carrot

and stick approach could be applied to implement the policy so as to have holistic impact on the entire economy and has provided valuable policy options that could salvage the future of the Nigeria economy.

1. The study has further revealed from the general consensus of the respondents that Nigeria Local Content Policy is the better policy reform agenda that could enhance the development of local skills and resources in executing local projects Nigerian economy if properly implemented.
2. The Local content policy has actually had a positive impact on the oil and Gas sector and has changed the perception of doing business in the oil sector.
3. The study further revealed that weak institutional capacity and lack of implementation mechanism are key challenges affecting the development of the local content in Nigeria.
4. The study also revealed an element of Economic sabotage, where some Nigeria companies are reluctant from accepting and implementing local content directives.

Policy Recommendations

Having examined and critically analyzed the Nigeria Local Content Development: Evaluation of the Journey so far and its implication on the economy, there is room for further research in order to gain more universal insights into the different dimensions in addressing the issue of local content as a component of economic reform in Nigeria and the following policy recommendations are also proposed.

1. Local Content as a component of economic reform cannot effectively contribute its quota in reforming the economy for greater good without the active, prominent, conspicuous and passionate involvement of the indigenous entrepreneurs, being the creative risk-takers who are expected to convert the presently foreign-utilized resources in the economy into veritable local economic inputs.
2. The Local Content Policy as passed into law can only be effective in enhancing the productive capacity of local entrepreneurs if government creates a legal framework within which business may be conducted and enforceable by law. Obviously, the absence of the State constitutions and (City and Villages) Ordinances in the present day Business Law creates a vacuum to the development of local content and should be addressed urgently.
3. Government should use Trade Protectionism as an urgent measure to develop local content in Nigeria. Trade protection is the use of government regulations to limit the importation of goods and services and protect their domestic industries against dumping and foreign

competition that hurts economy. Protectionism is based on the theory that such practices will help domestic producers survive and grow, thereby producing more jobs.

4. The indigenization policy should be invoked and implemented during start ups.
5. Joint venture can be mandated by government as a condition for doing business by foreigners in order to ensure the rapid development of Local Content. The benefits of international joint ventures are clear (shared technology, shared marketing expertise, entry into market where foreign goods and services are not allowed unless produced locally, and shared risk).
6. The security situation in the country especially in the North East and Niger Delta should be addressed. No right thinking businessman can invest in an environment devoid of security.
7. The Nigeria Content Development and Monitoring Board should be more proactive in establishing and enforcing penalties similar to gas flaring tax or CBN banking penalties for failure to achieve Nigerian Content targets.
8. Government should request through her agency performance audit report to ensure compliance with Nigeria Content directives. This will include review of quarterly performance with concrete indicators (work scope, man-hour, etc) should be submitted by each company operating in Nigeria.
9. Since Local Content is a component of an economic reform agenda, Nigeria government should review upwards the mandate of the Nigeria Content Development and Monitoring Board (NCDMB), expanding her operational capacity to ensure that their supervisory roles extend to other sectors of the economy as their present scope of operation could not enhance speedy development of the entire economy.
10. Local content should be made to be a universally acceptable economic reform policy to be adopted by every sectors of the economy and all companies operating in Nigeria should create a Local Content department to co-ordinate the implementation of local content directives.

Finally, Nigeria cannot be proposing of becoming one of the leading twenty economies in the world by 2020, (vision20:20) when she lack the scientific knowledge, technological skills and scientific consciousness to stimulate production in the country as well as social and institutional conscientiousness with numerous challenges. It was also observed from the various literatures reviewed that the local content policy is aimed at nurturing and sustaining a focused Local content performance in the Nigerian Economy.

The full implementation of the Nigerian Content Policy directives will deliver significant national economic development goals. The success of this policy would make Nigeria a genuine giant of Africa and biggest economy in Afric

REFERENCES

Chris, A.(2014) "Evaluating the Performance of the State House of Assembly and Economic Development in Nigeria (A Case Study of Ebonyi State House of Assembly 2009-2012)" *Journal of Management and Entrepreneurial Studies, Vol.1 No.3 and 4, P.203-219, March*

Emeka, E. (2014) Local Content Opportunities & Value-Preposition Models for Successful Investment in the Nigerian Oil service Industry: A paper presented at a Training seminar on Local Content, Yenagoa, September 15.

Jean, B. (2009) Nigerian Local Content: Challenges and Prospects, A paper presented at the International Association for Energy Economics Annual Conference Lagos, February 18.

Pedro, E. (2003) Local Content Development: Confronting the challenges and opportunities. Nigeria Energy Digest Conference, Port Harcourt November 13.

Paul, A.(2002) Dynamics of Equipment Leasing and Contract Financing for Local Contractors in the Oil and Gas Industry: A paper presented at seminar on Equipment Leasing in the Oil and Gas industry Port Harcourt November 29 -30.

Okolo, H. C. (2005) Nigeria Content in the Oil and Gas industry: A National Economic and Security imperative, A paper presented at the 3rd International Trade Exhibition on Materials and Services in the upstream sector of Nigeria oil and Gas Industry (Building Nigeria Capacity and capability in the oil and gas industry),Port Harcourt November 9.

Osamede, O.(2014) Federal Government proposed $150 million Oil and Gas industrial parks in the Niger Delta, *BusinessDay Media Ltd, September 15,*

Ugwushi, B.I.(2010): "Local Content Policy and SMEs Sector Promotion: The Nigerian Oil Industry Experience". *International Journal of Business and Management, Vol.* 5, No. 5 *ISSN 1833-3850*

Nigeria Energy Directory 2005.

Warner (2007) See www.ccsenet.org/ijbm

www.energylegalblog.com

www.nnpc.org.ng

www.cbn.org

www.worldbank.org

www.ncdmb.org

THE 2015 ELECTIONS IN NIGERIA: EVIDENCE OF ANNOUNCEMENT EFFECT FROM THE STOCK EXCHANGE

Rose M. AKO[1]

[1]Department of Economics, Veritas University, Abuja

Email
mbatomon@yahoo.com

ABSTRACT

This paper presents the empirical evidences of democratic change announcement effect on the Nigerian stock market and investigates the existence of abnormal patterns or volatility of capital market operations. A two-stage analytical strategy is employed. The first stage consists of examining daily returns of the All-Share Index (ASI). Abnormal Returns are found significant on event periods and there is a surprise. The results indicate distinct sets of announcement effects within the period; one of which border on good governance. The anomaly index was high when Buhari was announced presidential candidate, highest when the presidential elections were postponed but lower when the winner of the presidential elections was being announced. This could indicate that the Nigerian stock market reacted quite strongly to public announcement of Buhari as presidential candidate, reacted most strongly to the unprecedented postponement of presidential elections amidst conflicting signals for six weeks and also responded strongly to the public announcement of the winner of the presidential elections in Nigeria. In the second stage, logistic regression analysis is conducted to predict the announcement effect around the 2nd April 2015 declaration of presidential election results in Nigeria. Predictor variables are the daily actual and lagged values of the ASI recorded within the study period and their various derivatives considered pertinent. Three logistic models are estimated. All the models show high levels of overall correct classification ranging from 79.4% to 81.4% although none of the predictor variables is statistically significant at the .05 criterion. The announcement effect is correctly classified by two of the models at the point of declaration of results of the presidential elections. However, the assumption of rational behavior may not hold for the Nigerian stock market; unless we hold that deviations of the price from the fundamental value are rational for the Nigerian market.

Key Words: Announcement Effect; Stock Exchange; Rational-Expectations; Nigerian General Elections; Logistic Regression; Efficient Markets Hypothesis; Volatility.

1. INTRODUCTION

Economists usually believe that given the assumption of rational behavior and of rational expectations, the asset prices must simply reflect market fundamentals, i.e. prices can only depend on information about current and future

returns from the assets. Deviations from market fundamental values are taken as prima facie evidence of irrationality. Market participants on the other hand, often believe that fundamentals are only part of what determines the prices of assets. Extraneous events may well influence the price, if believed by other participants to do so; "crowd psychology" becomes an important determinant of prices. In a pioneering study on equity financing in Nigeria, Ako (1997) reported that nearly 50% (43%) of investments in Nigeria were characterized by considerations outside economic and financial considerations.

Furthermore, rationality of both behavior and of expectations often does not imply that the price of an asset be equal to its fundamental value. In other words, there can be rational deviations of the price from this value (Blanchard, Oliver J. and Mark W. Watson 1982). Seemingly concurring with this position, Bernanke and Gertler (2000) and Bernanke et al (2005) argue that it is nearly impossible to know for sure whether a given change in asset values results from fundamental factors, non-fundamental factors, or both. As such, Economists who are also market participants are at home with both positions and this is the directions of pursuit employed in this paper.

The paper explores the transmission mechanism of political/democratic announcements in the context of the Nigerian economy. Specifically, the paper explores empirical evidences of democratic change announcement on the Nigerian stock market and investigates the existence of abnormal patterns or volatility of capital market operations indicated by the value-weighted All-Share Index (ASI) of the Nigerian Stock Exchange. Following from this introduction, Section 2 presents brief general background and literature review. Section 3 introduces the methodology while Section 4 contains the estimated results of the paper. Section 5 concludes. The implications of the results for broader issues are also briefly discussed.

2. BACKGROUND AND LITERATURE REVIEW

General Background

The 2015 elections in Nigeria were generally dubbed "the most hotly contested election since the end of military rule in 1999" by the international press amid immense and largely negative global attention focused on Nigeria. Within the country, political tensions were at feverish pitch and governance practically suspended in the process even as the economy itself appeared at a standstill in the midst of growing general insecurity. As matters were coming to a head, the imminent elections were suddenly postponed. The presidential and National Assembly elections were shifted from 14 February to 28 March while the governorship and state Houses of Assembly elections were shifted from 28 February to 11 April. According to Attahiru Jega, chairman of the Independent National Electoral Commission (INEC), National Security

Advisor Sambo Dasuki directed the postponement of the February 14 elections for at least six weeks. Dasuki said that starting February 14, the military and security services will launch a campaign against Boko Haram, the militant Islamist movement in northeast Nigeria. Therefore, they cannot provide the necessary security for the electoral process. "Nobody has coerced us ... to take this decision," Jega said. As reported by Reuters news network, the election postponement was the direct result of the national security advisor and the security services' call for postponement. Jega's statement clearly indicated that the postponement was not caused by the logistical challenges of organizing the polling, specifically the distribution of permanent voter cards.

The ruling Peoples Democratic Party -PDP had been pressuring the INEC to delay the polls, arguing it is not ready to hold them. The National Security Advisor Sambo Dasuki had called for a delay the previous month over concerns that not enough biometric I.D. cards necessary for voting would be distributed in time and now wrote conveying inability of the security agencies to provide security for the scheduled elections. Concerns over security, due to the insurgency in the northeast, have been raised several times as a reason for a delay, although INEC had outlined red zones where the vote could not be held and alternative polling units for the affected constituencies.

The opposition All Progressives Congress -APC had insisted on keeping the February date for the elections to remain credible, saying the only reason the pro-Jonathan camp was pushing for a delay was that it knew he would lose if the polls were held as scheduled. Buhari, who was running for a fourth time against the PDP, believed that he will win. Jonathan was initially viewed as the likely winner but the momentum had shifted to the opposition.
Given this background, there were immediate and far ranging reactions to the announced election postponement as widely reported in local and international media some of which are reviewed as follows.

Following the election postponement announcement, U.S. Secretary of State John Kerry said in a statement Washington was "deeply disappointed" by Nigeria's decision to delay the election. "Political interference with the Independent National Electoral Commission is unacceptable, and it is critical that the government not use security concerns as a pretext for impeding the democratic process," said Kerry who had visited Nigeria on Jan. 25, 2015 urging both candidates to prevent potential post-election violence by their supporters.
In its editorial, the New York Times (NYT) said: "any argument to delay the vote might be more credible if President Goodluck Jonathan's government had not spent much of the past year playing down the threat posed by the militants and if there were a reasonable expectation that the country's weak military has the ability to improve security in a matter of weeks. The NYT stated further that "It appears more likely Mr. Jonathan grew alarmed by the surging appeal

of Muhammadu Buhari, a former military ruler who has vowed to crack down on Boko Haram. By dragging out the race, Mr. Jonathan stands to deplete his rival's campaign coffers, while he continues to use state funds and institutions to bankroll his own. The NYT editorial concluded "That Mr. Buhari, who helped launch a coup against a democratically elected government in 1983 and ruled until late 1985, has emerged as potential winner is more of an indictment of Mr. Jonathan's dismal rule than recognition of the former military chief's appeal".

Similarly, according to a February 9, 2015 Council for Foreign Relations (CFR) blog by John Campbell titled "Why Were Nigeria's Presidential Elections Postponed?", "Skepticism abounds about the postponement. Buhari's momentum had been building. A delay may allow Jonathan and the PDP to recapture the momentum. Cynics – or realists – suggest that a delay will also enable the PDP to put in place the necessary arrangements to rig the elections. Others suggest that the military and the security services will do all that is necessary to block a Buhari presidency. When Buhari was chief of state for twenty months, 1983-1985, he cracked down on the ubiquitous corruption within the military and elsewhere. Accordingly, he was ousted from office in a military coup led by Gen. Ibrahim Babangida."

Campbell's blog further opined that "Given the government's failure over the past five years to address the resilient militant movement's violent insurgency, Dasuki's claim that the security services can defeat Boko Haram in the next six weeks rings hollow. Despite the short period to fulfill such an enormous task, Dasuki is claiming that the general election will not be postponed any further. Nevertheless, if his new military initiative against Boko Haram falls short and the elections are again postponed in March, the possibility of popular unrest will increase. The blog concluded that "Nigeria is in unchartered territory, with political developments no longer following familiar precedents".

Announcement Effects and Rational-Expectations

By definition, an Announcement Effect also known as a "signal effect" is a change in security prices or volatility as a result of some announcement. It can be used as a general term for the reaction to any development that affects trading, such as a change in dividend policy, new products and acquisitions or a stock split. Normally, the types of news reports (positive or negative) that are issued at any particular moment generate different types of impact on markets. For instance, earnings reports (good or bad), corporate governance (increased or poor), overall economic and political indicators (positive, uncertainty or negative), and unexpected, unfortunate occurrences will translate to corresponding buying/selling pressure and an increase/decrease in

stock price. Furthermore, the definition of "news" has expanded over time (see Dominguez and Panthaki, 2006).

However, in reality, it is difficult if not impossible, to capitalize on news in the market. This is because the impact of new information on a stock depends on how unexpected the news is since the market is always building future expectations into prices. For example, if a company posts better-than-expected profits, its stock price will likely jump but, if that same profit was expected by a majority of investors, the stock's price will likely remain the same as the profit would have already been factored into the stock price. Consequently, it is unexpected news - and not just any news - that helps drive prices.

In theory, an efficient market is one where no individual or group of people gets an abnormal profit on trading because prices are random in nature. The concept of efficient markets is explained in the efficient markets hypothesis which predicts very rapid systematic price reactions to news surprises to prevent risk-adjusted profit opportunities. This theory of efficient markets was popularized in the Random Walk Hypothesis by early researchers like Gordon (1959) but more precise version of market efficiency was given by Fama (1965 & 1970). One of the common themes of this theory is that the volatility effect of announcements potentially depends on factors such as mixed expectations, contradictory information, and the source of the shocks, the sign of the shock, and whether the announcement is planned or spontaneous (Flood and Garber 1980, Garber 2000, Farhi and Tirole 2009).

Advances in econometric modeling now enable researchers to better examine the relation between announcements and volatility (Gertler and Kiyotaki 2009, Martin and Ventura 2010, Neely and Dey 2010 & 2011). The main finding from the literature is that news releases public information can immediately impact prices and volatility and impacts volume through order flow with a delay. The release of public information causes an immediate "average" effect on prices, as well as delayed trading based on both the news and private information (Evans and Lyons, 2005). This delayed trading produces the protracted volatility found in the literature. Several studies have established that public information flow affects market volume and volatility (Ederington and Lee, 2001; Melvin and Yin, 2000; Chang and Taylor, 2003).

3. METHODOLOGY

First Stage Methodology

The first stage methodology consists of examining 103 daily returns of the ASI during the period of interest from 1st December 2014 to 30th April 2015 to identify anomaly cases using Identify Unusual Cases procedure of the computer software IBM SPSS 20. The procedure is a tool for quick detection of unusual cases for data auditing purposes in an exploratory analysis, prior to any inferential data analysis. The procedure is designed for generic anomaly detection; that is, anomalous cases are identified based upon deviations from the norms of their peer groups, and is not specific to any particular application in which anomalies have established definitions.

Second Stage Methodology

In the second stage, logistic regression analysis is conducted to predict the announcement effect around the 2nd April 2015 declaration of presidential election results indicating imminent change in government in Nigeria. Predictor variables are the daily actual and lagged values of the ASI recorded within the study period and their various derivatives considered pertinent. The All-Share Index tracks the general market movement of all listed equities on the Exchange, including those listed on the Alternative Securities Market (ASeM), regardless of capitalization. Based on the first stage results indicating distinct sets of anomalies corresponding to relevant public announcements within the period, two categories of the dependent variable were defined and specified as follows:

Table 1 Definition of Dependent Variable

Category for Dependent Variable - Announcement Effect (AE)	**Definition**
0	Routine Stock Market Days
1	Days of Election Announcement Issues

Table 2 Definition of Predictor Variables

Predictor Variable	**Definition**
All Share Index (ASI)	Daily Index Points recorded on the Stock Exchange
ASI_1	Lagged (Previous day) ASI
ASI_CA	Actual Daily Change (-ve or +ve) in ASI
ASI_CAD	Dummy for ASI_CA ; 0 if below calculated mean and 1 otherwise
ASI_PCA	Percentage Actual Daily Change in ASI
ASI_PCAD	Dummy for ASI_PCA; 0 if below calculated mean and 1 otherwise
ASI_C	Simple Numerical Change in ASI without directional signs
ASI_CD	Dummy for ASI_C; 0 if below calculated mean and 1

	otherwise
ASI_PC	Percentage Simple Numerical Change in ASI without directional signs
ASI_PCD	Dummy for ASI_PC; 0 if below calculated mean and 1 otherwise

Three forms of the equation or function of the logistic regression analysis estimated are:

$$\log\frac{p}{1-p} = \alpha + \beta_1 ASI + \beta_2 ASI_{-1} + \beta_3 ASI_{PCA} + \beta_4 ASI_{PCAD} + \beta_5 ASI_{CAD} + \varepsilon \quad (1)$$

$$\log\frac{p}{1-p} = \alpha + \beta_1 ASI + \beta_2 ASL_1 + \beta_3 ASI_{PC} + \beta_4 ASI_C + \beta_5 ASI_{CD} + \beta_6 ASI_{PCAD} + \varepsilon \quad (2)$$

$$\log\frac{p}{1-p} = \alpha + \beta_1 ASI + \beta_2 ASL_1 + \beta_3 ASI_{PCA} + \beta_4 ASI_{CD} + \beta_5 ASI_{PCD} + \varepsilon \quad (3)$$

Where:

Log $[p/(1-p)]$ = logarithm of the odds that a particular event will occur..
α = Intercept or constant.
$\beta_1 \ldots \beta_6$ = Predictor parameters estimated.

Data

The Primary data consist of 103 daily returns of the All-Share Index (ASI) from 1st December 2014 to 30th April 2015. Secondary data consist of lagged values of the primary data (ASI_1) and pertinent derivatives.

4. ESTIMATION RESULTS

First Stage Results

Tables 3 and 4 present the exploratory results of the anomaly indices for the primary and secondary data cases respectively using Identify Unusual Cases procedure of computer software IBM SPSS Statistics 20 while Table 5 harmonizes the anomaly cases indicated with public announcement issues.

From the primary data results, anomalies were indicated for the All Share Index of the Nigerian Stock Exchange on days surrounding public announcements for the emergence of Buhari as a presidential candidate, on days surrounding the announced postponement of presidential elections for six weeks and on days surrounding the announcement of Buhari as the winner of the 2015 presidential elections in Nigeria.

Furthermore, the anomalies were high when Buhari was announced presidential candidate, highest when the presidential election was postponed and lower when the winner of the presidential elections was being announced. This could indicate that the Nigerian stock market reacted quite strongly to public announcement of Buhari as presidential candidate, reacted most strongly to the unprecedented postponement of presidential elections amidst conflicting signals for six weeks and also responded strongly to the public announcement of the winner of the presidential elections in Nigeria.

It would appear the Nigerian stock market strongly noted the blunders of corporate governance of the Nigerian polity in the election postponement as it had underlying negative implications for corporate Nigeria. These indications are further amplified by Figures 4.1- 4.6 of the recorded ASI during the pertinent announcement periods as presented below.

Here, we see some evidence that the impact of new information on a stock depends on how unexpected the news is since the market is always building future expectations into prices. The news of the final announcement of results of presidential elections had lowest anomaly indices because the results were expected by a majority of investors and would have already been factored into the stock price. On the other hand, postponement of elections was unprecedented and unexpected news by a majority of investors which likely caused stock prices to jump leading to highest anomaly index within the period.

Table 3 Anomaly Cases for Primary Data ASI

Anomaly Case Index List	
Case	Anomaly Index
51	5.863
52	5.208
8	4.528
50	4.328
83	3.791

Anomaly Case Peer ID List			
Case	Peer ID	Peer Size	Peer Size Percent
51	2	68	66.0%
52	2	68	66.0%
8	1	35	34.0%
50	2	68	66.0%
83	2	68	66.0%

Table 4: Anomaly Cases for Secondary Data ASI_1

	Anomaly Case Peer ID List

Anomaly Case Index List

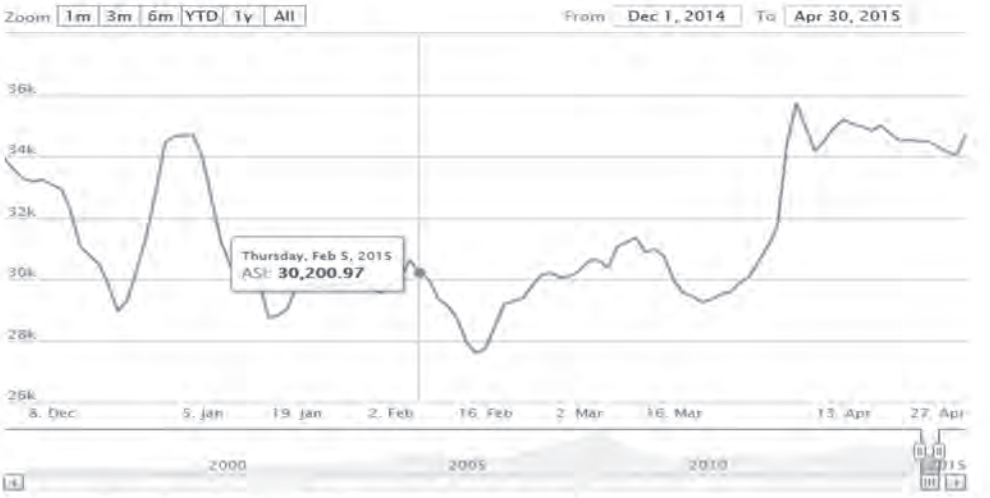
Case	Anomaly Index
52	5.849
53	5.195
9	4.368
51	4.319
84	3.783

Case	Peer ID	Peer Size	Peer Size Percent
52	2	68	66.7%
53	2	68	66.7%
9	1	34	33.3%
51	2	68	66.7%
84	2	68	66.7%

Table 5: Anomaly Cases versus Announcement Issues

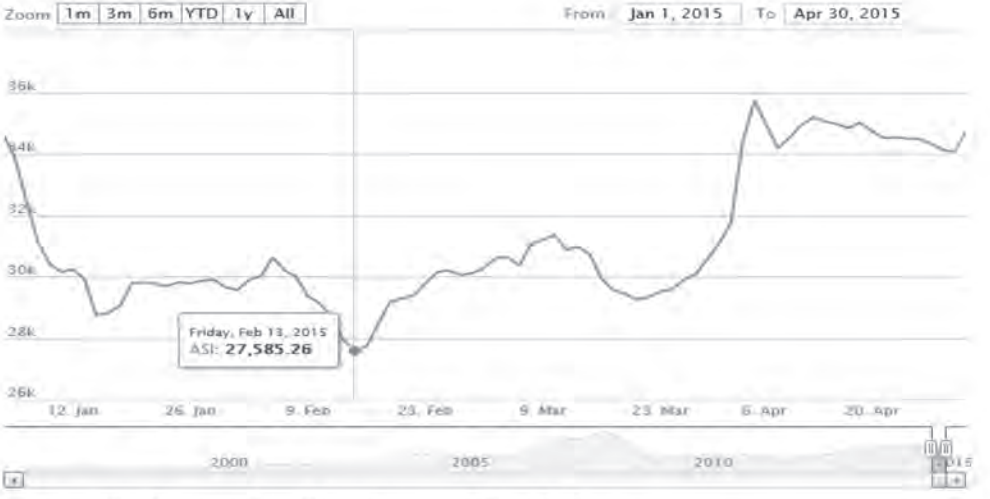
ANOMALY CASE	CORRESPONDING DATE	PEER ID	ANNOUNCEMENT ISSUE
8	December 10, 2014	1	Buhari Emerges Presidential Candidate
9	December 11, 2014	1	Buhari Emerges Presidential Candidate
50	February 12, 2015	2	February 14 Presidential Elections Postponed
51	February 13, 2015	2	February 14 Presidential Elections Postponed
52	February 16, 2015	2	February 14 Presidential Elections Postponed
53	February 17, 2015	2	February 14 Presidential Elections Postponed
83	March 31, 2015	2	Buhari Emerging President Elect
84	April 01, 2015	2	Buhari Emerging President Elect

Figure 1 ASI before Presidential Election Postponement



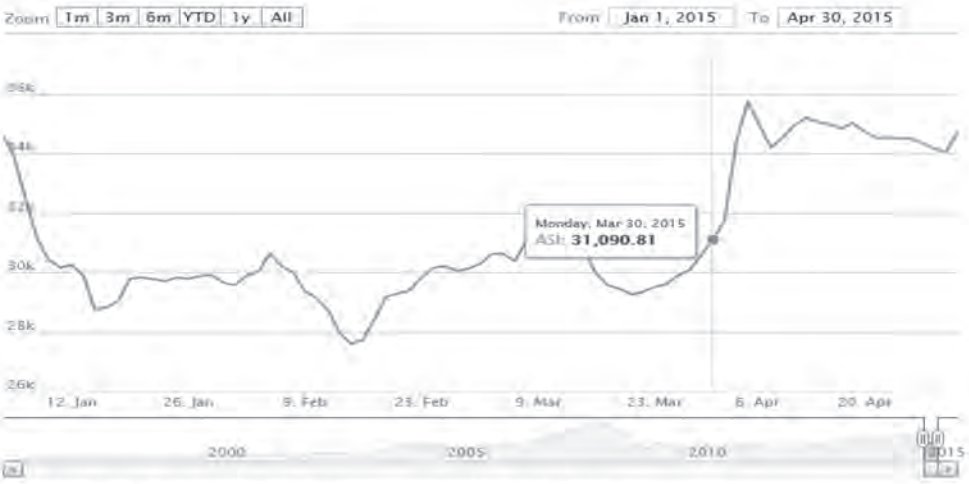
Source: The Nigerian Stock Exchange – Market Data

Figure 2 ASI at Presidential Election Postponement



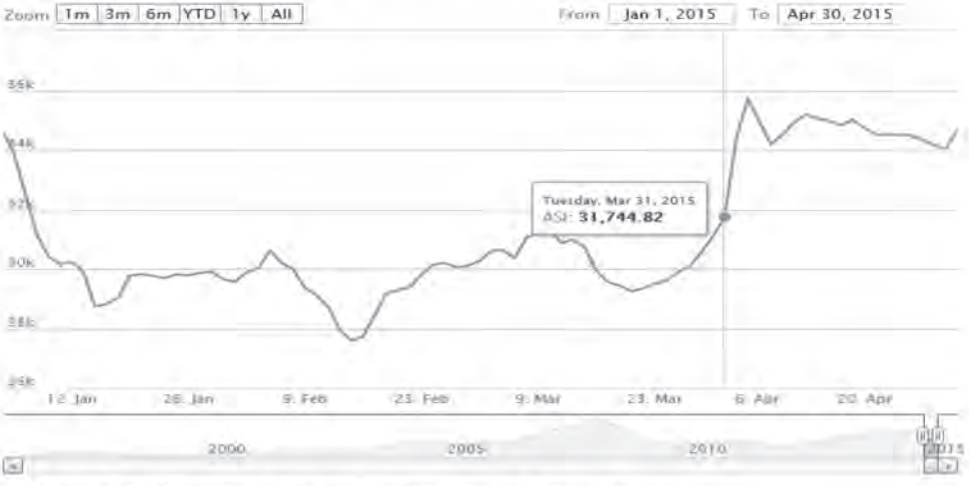
Source: The Nigerian Stock Exchange – Market Data

Figure 3 ASI first day after Presidential Elections



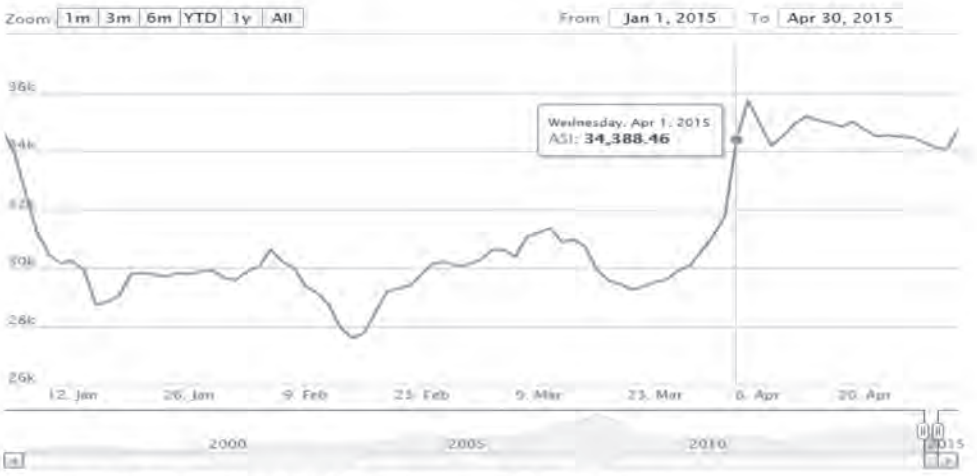
Source: The Nigerian Stock Exchange – Market Data

Figure 4 ASI first day of Presidential Election Results



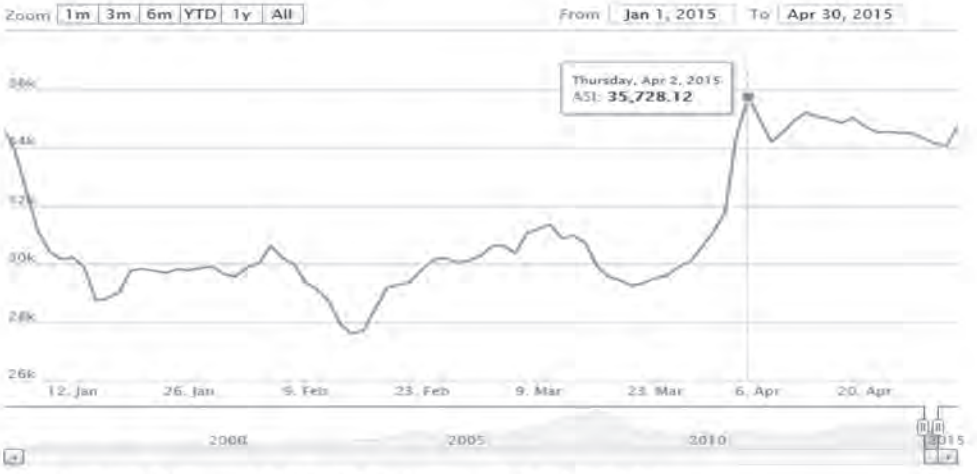
Source: The Nigerian Stock Exchange – Market Data

Figure 5: ASI second day of Presidential Election Results



Source: The Nigerian Stock Exchange – Market Data

Figure 6 ASI final day of Presidential Election Results



Source: The Nigerian Stock Exchange – Market Data

Second Stage Results

In literature, once the logistic regression model is estimated there are 3

primary considerations for diagnostic analysis: 1) How well does the model predict outcome? Does a relationship exist between the independent variables as a group and dependent variable such that the independent variables within a given level of confidence actually predict the outcome and that outcome is not random chance? 2) If the model works well, what is the relative predictive strength of each independent variable? 3) Are the assumptions of the model completely satisfied? This Section of the paper attempts to answer some of these questions as it relates to our empirical explorations.

Model 1 Estimated Result

Tables 6 -8 present the results of the estimation of model 1 using binary logistic regression procedure of the computer software IBM SPSS Statistics 20. Logistic regression is performed to test the efficient markets hypothesis which predicts very rapid systematic price reactions to news surprises to prevent risk-adjusted profit opportunities. The logistic regression analysis is employed to predict the probability that the Nigerian Stock Exchange is efficient and responds to public announcements. The predictor variables are daily All Share Index (ASI), lagged daily All Share Index, Percentage Actual Daily Change in ASI, Dummy for Percentage Actual Daily Change in ASI and Dummy for Actual Daily Change in ASI. From Table 6, the model explained only 8.9% (Nagelkerke R^2) of the variance in stock prices but was able to correctly classify 100% of routine daily stock market activities and 9.5% of public announcement related stock market activities for an overall success rate of 81.4% as presented in Table 7.

Table 8 shows the logistic regression coefficient, Wald test, and odds ratio for each of the predictors. It shows the regression function -2.865 + .009* ASI – .009* ASI_1 - 2.673* ASI_PCA + 1.166* ASI_PCAD - 1.785* ASI_CAD.

However, by employing a .05 criterion of statistical significance, none of the predictor variables is significant and are therefore not explored further.

Table 6 Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	97.757[a]	.057	.089

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Table 7 Classification Table[a]

	Observed	Predicted

			AE		Percentage Correct
			.00	1.00	
Step 1	AE	.00	81	0	100.0
		1.00	19	2	9.5
	Overall Percentage				81.4

a. The cut value is .500

Table 8 Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	ASI	0.01	0.01	2.59	1	.108	1.009	1.00	1.02
	ASI_1	-0.01	0.01	2.55	1	.111	.991	0.98	1.00
	ASI_PCA	-2.67	1.74	2.36	1	.125	.069	0.00	2.09
	ASI_PCAD(1)	1.17	1.48	0.62	1	.432	3.211	0.18	58.87
	ASI_CAD(1)	-1.79	1.52	1.37	1	.242	.168	0.01	3.33
	Constant	-2.87	3.90	0.54	1	.462	.057		

a. Variable(s) entered on step 1: ASI, ASI_1, ASI_PCA, ASI_PCAD, ASI_CAD.

Model 2 Estimated Results

Tables 9 - 11 presents the results of the estimation of model 2 using binary logistic regression procedure of the computer software IBM SPSS Statistics 20.

In this model, the predictor variables are daily All Share Index (ASI), lagged daily All Share Index, Percentage Simple Numerical Change in ASI without directional signs, Simple Numerical Change in ASI without directional signs, Dummy for Simple Numerical Change in ASI without directional signs and Dummy for Percentage Simple Numerical Change in ASI without directional signs. From Table 9, the model explains 15.7% (Nagelkerke R^2) of the variance in stock prices but is able to correctly classify 97.5% of routine daily stock market activities and 14.3% of public announcement related stock market activities for an overall success rate of 80.4% as presented in Table 10.

Table 11 shows the logistic regression coefficient, Wald test, and odds ratio for each of the predictors. It shows the regression function -5.282 + .000* ASI + .000* ASI_1 - .493* ASI_PC + .002* ASI_C + .358* ASI_CD + 1.103* ASI_PCD.

This model shows a strong correct classification for the presence of announcement effect of the final results of the presidential elections a day before, on the final day and a day after the public announcement. This may indicate that this particular model is able to capture some evidence of protracted volatility in the Nigerian stock market. It is also worth

noting that the ASI and its lag had the same magnitude of influence on the classification results with both posting .000β values.

Employing a .05 criterion of statistical significance, again none of the predictor variables is significant and are therefore not explored further.

Table 9: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	92.924[a]	.100	.157

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 10: Classification Table[a]

	Observed		Predicted		
			AE		Percentage Correct
			.00	1.00	
Step 1	AE	.00	79	2	97.5
		1.00	18	3	14.3
	Overall Percentage				80.4

a. The cut value is .500

Table 11: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	ASI	.000	.000	.004	1	.949	1.000	.999	1.001
	ASI_1	.000	.000	.036	1	.850	1.000	.999	1.001
	ASI_PC	-.493	1.074	.211	1	.646	.611	.074	5.012
	ASI_C	.002	.003	.290	1	.590	1.002	.995	1.008
	ASI_CD(1)	.358	1.372	.068	1	.794	1.431	.097	21.083
	ASI_PCD(1)	1.103	1.430	.595	1	.441	3.012	.183	49.643
	Constant	-5.282	4.062	1.691	1	.193	.005		

a. Variable(s) entered on step 1: ASI, ASI_1, ASI_PC, ASI_C, ASI_CD, ASI_PCD

Model 3 Estimated Results

Tables 12 – 14 presents the results of the estimation of model 3 using binary logistic regression procedure of the computer software IBM SPSS Statistics 20.

In this model, the predictor variables are daily All Share Index (ASI), lagged daily All Share Index, Percentage Actual Daily Change in ASI, Dummy for Simple Numerical Change in ASI without directional signs and Dummy for Percentage Simple Numerical Change in ASI without directional signs. From Table 12, the model explains 21.0% (Nagelkerke R^2) of the variance in stock prices and is able to correctly classify 96.3% of routine daily stock market activities and 14.3% of public announcement related stock market activities for an overall success rate of 79.4% as presented in Table 13.

Table 14 shows the logistic regression coefficient, Wald test, and odds ratio for each of the predictors. It shows the regression function -5.910 + .009* ASI – .009* ASI_1 - 2.994* ASI_PCA + .254* ASI_PC + 1.468* ASI_PCD.

This model also shows a strong correct classification for the presence of announcement effect of the final results of the presidential elections but only on the final day of the public announcement. It is also worth noting that the ASI and its lag had the same magnitude of influence on the classification results but this time, they had opposing influences on the results.

Employing a .05 criterion of statistical significance, again none of the predictor variables is significant and are therefore not explored further although three predictor variables (ASI, ASI_1 and ASI_PCA) are shown to be significant at the .10 criterion of statistical significance.

Table 12: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	89.014[a]	.134	.210

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Table 13: Classification Table[a]

	Observed		Predicted		
			AE		Percentage Correct
			.00	1.00	
Step 1	AE	.00	78	3	96.3
		1.00	18	3	14.3
	Overall Percentage				79.4

a. The cut value is .500

Table 14: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	ASI	.009	.005	3.013	1	.083	1.009	.999	1.020
	ASI_1	-.009	.005	2.947	1	.086	.991	.980	1.001
	ASI_PCA	-2.994	1.721	3.026	1	.082	.050	.002	1.461
	ASI_CD(1)	.254	1.294	.038	1	.845	1.289	.102	16.281
	ASI_PCD(1)	1.468	1.328	1.222	1	.269	4.341	.322	58.594
	Constant	-5.910	4.155	2.023	1	.155	.003		

a. Variable(s) entered on step 1: ASI, ASI_1, ASI_PCA, ASI_CD, ASI_PCD.

5. CONCLUSIONS

The goal of the paper is to explore the transmission mechanism of political/democratic announcements in the context of the Nigerian economy. Specifically, the paper explores empirical evidences of democratic change announcement on the Nigerian stock market and investigates the existence of abnormal patterns or volatility of capital market operations indicated by the value-weighted All-Share Index (ASI) of the Nigerian Stock Exchange.

The results show some evidence that the impact of new information on a stock depends on how unexpected the news is since the market is always building future expectations into prices. The news of the final announcement of results of presidential elections had lowest anomaly indices because the results were expected by a majority of investors and would have already been factored into the stock price. On the other hand, postponement of elections was unprecedented and unexpected news by a majority of investors which likely caused stock prices to jump leading to highest anomaly index within the period.

The results of the anomaly estimations variously indicate distinct sets of announcement effects within the period; one of which border on good governance. The Nigerian stock market reacted quite strongly to public announcement of Buhari as presidential candidate, reacted most strongly to the unprecedented postponement of presidential elections amidst conflicting signals for six weeks and also responded strongly to the public announcement of the winner of the presidential elections in Nigeria. The Nigerian stock market strongly noted the blunders of corporate governance of the Nigerian polity in the election postponement as it had underlying negative implications for corporate Nigeria.

All the three logistic models show high levels of overall correct classification ranging from 79.4% to 81.4% and may have captured some evidence of protracted volatility in the Nigerian stock market. Nevertheless, the anomaly results are not found to be statistically significant by the logistic regression analysis although two of the three logistic regression models estimated correctly classify the announcement effect at the point of declaration of presidential results in line with the anomaly results.

However, despite the high level of classification success of the logistic regression, none of the predictor variables of the three models estimated is significant when employing a .05 criterion of statistical significance. The results may thus indicate a lack of efficiency of the stock market because asset prices do not correctly reflect all existing information. The Nigerian stock market may still be like a casino as reported by Ako in a pioneering research nearly 20 years ago in 1997. It may also appear the lessons of the last stock market crash are yet to be learnt and/or reflected in the Nigerian market.

Furthermore, Market participants in Nigeria may believe that fundamentals are only part of what determines the prices of assets and extraneous events may have a most significant influence on prices. Hence, "crowd psychology" appears to be a most important determinant of prices on the Nigerian stock exchange and we may conclude that deviations from market fundamentals or evidence of irrationality are the norm. The assumption of rational behavior may not hold for the Nigerian stock market; unless we hold that deviations of the price from the fundamental value are rational for the Nigeria market.

REFERENCES

Ako, Rose M. (1997) Equity *Financing in Nigeria: Theory and Evidence*, Lagos July 1997.

Bernanke, Ben S. and Kenneth N. Kuttner (2005): "What Explains the Stock Market Reaction to Federal Reserve Policy?," *The Journal of Finance* 60(3), 1221-1256.

Bernanke, Ben, and Mark Gertler, 2000: "Monetary Policy and Asset Price Volatility," *National Bureau of Economic Research (NBER) Working Paper* No. 7559.

Blanchard, Oliver J. and Mark **W.** Watson (1982) "Bubbles, Rational Expectations and Financial Markets" *National Bureau of Economic Research (NBER) Working Paper* #945

Chang, Yuanchen and Taylor, Stephen J. (2003) "Information Arrivals and Intraday Exchange Rate Volatility." *Journal of International Financial Markets, Institutions and Money*, April

2003, *13*(2), pp. 85-112

Dominguez, Kathryn M. and Panthaki, Freyan (2006). "What Defines 'News' in Foreign Exchange Markets?" *Journal of International Money and Finance*, February 2006, *25*(1), pp. 168-98.

Ederington, Louis H. and Lee, Jae Ha (2001). "Intraday Volatility in Interest-Rate and Foreign-Exchange Markets: ARCH, Announcement, and Seasonality Effects." *Journal of Futures Markets*, June 2001, 21(6), pp. 517-52.

Evans, Martin D.D. and Lyons, Richard K. (2005) "Do Currency Markets Absorb News Quickly?" *Journal of International Money and Finance*, March 2005, *24*(2), pp. 197-217.

Fama, E. (1965). The Behavior of Stock Market Prices. *Journal of Business*, 38, 34-105.

Fama, E. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *Journal of Finance*, 383-417.

Farhi, E. and J. Tirole, (2009), *Bubbly Liquidity*, mimeo, Harvard University.

Flood, Robert P. and Peter M. Garber (1980), "Market Fundamentals versus Price-level Bubbles:
The First Tests." *'Journal of Political Economy* 88, no. 4 (August, 1980): pp. 745-770.

Garber, Peter, (2000), Famous *First Bubbles: The Fundamentals of Early Manias* Cambridge: MIT Press.

Gertler, M. and N. Kiyotaki, (2009), *Financial Intermediation and Credit Policy*, mimeo, NYU.

Gordon, M. J. (1959). Dividend, Earning, and Stock Prices. *The Review of Economics and Statistics*, 41, 99-105.

http://www.bloomberg.com/news/articles/2015-02-08/nigeria-vote-held-hostage-to-six-week-success-against-boko-haram

http://www.dailymail.co.uk/wires/afp/article-2945901/Nigeria-vote-not-postponed-further.html

http://www.reuters.com/article/2015/02/08/us-nigeria-election-idUSKBN0LB0TL20150208

IBM SPSS Statistics 20.

International Monetary Fund (2000), Asset *Prices and the Business Cycle World Economic Outlook* Chapter III, Washington.

John Campbell (2015): http://blogs.cfr.org/campbell/2015/02/09/why-were-nigerias- presidential-elections-postponed

Martin, A. and J. Ventura, (2010), *Some Theoretical Notes on the Current Crisis*, mimeo, CREI.

Melvin, Michael and Yin, Xixi (2000): "Public Information Arrival,

Exchange Rate Volatility and Quote Frequency." *Economic Journal*, July 2000, *110*(465), 644-61.

Neely, Christopher J. and Dey, S. Rubun. (2010) "A Survey of Announcement Effects on Foreign Exchange Returns." *Federal Reserve Bank of St. Louis Review*, September/October 2010, *92*(5), pp. 417-63;

Neely, Christopher J. and Dey, S. Rubun. (2011) "A Survey of Announcement Effects on Foreign Exchange Volatility and Jumps." *Federal Reserve Bank of St. Louis Review*, September/October 2011, *93*(5), pp. 361-407;

Nigerian Stock Exchange Market Data - Various

A SURVEY OF FINANCIAL BOOTSTRAPPING IN NIGERIAN SMALL AND MEDIUM ENTERPRISES: EVIDENCE FROM PROFESSIONAL SERVICES AND MANUFACTURING FIRMS

Oladipupo M. Tijani[1] Semiu B. Adeyemi[2], Karimu A.Ishola[3]

[1]Department of Accounting, Al-Hikmah University,Adewole-Estate, Ilorin
[2]Department of Accounting, University of Lagos,Akoka-Lagos
[3]Department of Accounting, Al-Hikmah University,Adewole-Estate, Ilorin,

Email
oladipupotijani@gmail.com (Tijani, O. M.)
sadeyemi@unilag.edu.ng (Adeyemi, S. B.)
isola.abdulkareem@gmail.com (Ishola, K. A.)

ABSTRACT

This paper uses survey data from 103 Nigerian, small and medium-sized professional firms and real sector (manufacturing and distribution) enterprises to examine the association between their financial bootstrapping techniques. First, mean difference test identifies the underlying dimensions of differences between bootstrapping usage across these sectors. Next, the determinants of bootstrapping techniques usage, as proxied by industry, size, age, capital/labour, and cash flow are examined with the aid of regression analyses. The results robustly indicate that industry characteristics affect the use of bootstrapping. In particular, professional service firms make greater use of this financing mode than do real sector enterprises. Moreover, industry evolves as a main predictor for the use of bootstrapping. This further shows that the higher usage is primarily for financing rather than transactional purposes. The results suggest that, in a country with poorly developed formal financial sector, firms can support their growth through non-formal financial channels that largely rely on implicit contractual relations.
Keywords: small and medium-sized enterprises, bootstrapping, industry, financing, growth.

1. INTRODUCTION

This research note is inspired by the suggestion in Ebben & Johnson (2005, p. 862) on the use of bootstrapping techniques by enterpreneurs:

'...future research on bootstrapping should look into the impact of individual characteristics of entrepreneurs on the bootstrapping techniques they utilize. Given that prior studies have found that different types of entrepreneurs set up different types of organizations, with different goals, structures, and management, and less professional entrepreneurs seek less outside equity because they are unaware of outside sources.

The degree to which individual entrepreneurship characteristics impact the decision to bootstrap versus raise outside financing is an important consideration for future research.

Testing entrepreneurs across sectors on the use of bootstrapping in Nigeria would require ideal conditions of data availability that are observable in practice. However, the foregoing extract also implies that bootstrapping techniques could differ across professional and real sector enterprises due to structure, market strategy and product/service differentiation. Extant studies have documented that lack of data is the major factor inhibiting research on small business finance in accounting and finance (Berger & Udell, 1998). In this paper, we regard bootstrapping as a specific and

measurable source of financing for small firm's survival and growth in an emerging market, recognizing that total elimination is an unlikely observable event due to their limited access to specialized financial intermediaries. We ask whether bootstrapping techniques differ across entrepreneurs in the real sector and professional SMEs and what factors determine the use of bootstrapping amongst surveyed firms. We provide empirical evidence to answer these questions using the proprietary data set available from a cross section of small and micro enterprises (SMEs) in Nigeria, containing the four bootstrapping techniques identified in Winborg and Landstrom (2001) and extended in Ebben and Johnson (2005). Having access to data across entrepreneurs in professional services and manufacturing sets allows this paper to distinguish between the various bootstrapping techniques matched by company-specific financing strategies.

The motivation for this study is the test of competing claims regarding the existence or absence of an association between internal sources of financing for real and professional service sector enterprises. The contribution is to provide new insight into the determinants of the use of bootstrapping amongst SMEs and hence to point to policy implications for regulators seeking to monitor sources of financing available for SMEs in Nigeria. The impulse for focusing on Nigeria is firstly our access to proprietary data on entrepreneurial classification, all collected from both groups. Secondly, the call for economic growth and development through diversification, through support for SMEs has come under increased scrutiny. The lack of access to external financing by SMEs has also been questioned on a number of occasions that set the pace for various major economic policies in recent past. In an apparent attempt to boost SMEs trust and confidence and at the same time increase their productive capacity, the Nigerian government has established a number of agencies (for example, the Small and Medium Enterprises Development Agency of Nigeria [SMEDAN]) and expanded existing capacity of specialized financial intermediaries (e.g., the Bank of Industry [BOI] to offer cooperative development financial services to SMEs. Hence, issues relating to these establishments have become particularly important and are on the agenda of many researchers and practitioners in accounting and finance. Finally, this paper responds to calls for empirical testing of bootstrapping techniques amid small professional entrepreneurs (Ebben & Johnson, 2005) and in comparison with their manufacturing counterparts.

Relevant prior literature is reviewed and hypotheses are developed in Section 2. The research methodology is specified in Section 3. Results are reported and discussed in Section 4, leading to identification of limitations and conclusions in Section 5.

2. PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

The term bootstrapping has been part of the business lexicon for decades. By "financial bootstrapping" we mean "highly creative ways of acquiring the use of resources without borrowing money or raising equity financing from traditional sources" (Freear, Sohl, & Wetzel, 1995), launching ventures with modest personal funds" (Bhide, 1992, p. 110) or "a method by which entrepreneurs can extend the runway (Payne, 2007). To manage resource constraints (Chaganti, Decarolis, & Deeds, 1995; Cassar, 1995) entrepreneurs are often compelled to generate alternative solutions "that are superior to those developed in situations where resource slack is readily available" (Grichnik & Singh, 2010, p. 1), take proactive and conscious strategies to reduce cost of capital and finance risk (Winborg, 2009) to retain decision making control (Shane, 2008) regardless of available capital (Rutherford et al., 2012). Financial bootstrapping has long been documented in academic literature as an

"essential entrepreneurial phenomenon" in academic literature (Grichnik & Singh, 2010, p. 1) for about 20 years (Van Auken & Carter, 1989) but has only recently received scholars' attention (Rutherford, Coombes, & Mazzei, 2012). While this phenomenon begins to gain attention with time (Ebben, 2009) and venture growth (Vanacker, Manigart, Meuleman, & Sels (2011), empirical studies remain limited, underpowered or lack external validity (Rutherford et al., 2012). Within the existing literature on bootstrapping, majority of scholars emphasis on various bootstrapping techniques, (Windborg & Landstrom, 2001), commonly used methods (Carter & Van Auken, 2005) and what circumstances determine what practices (Grichnik & Singh, 2010). Yet, the empirical studies fail to address possible variations in bootstrapping techniques amongst professional and manufacturing SMEs. Though generally accepted as an approach used by small firms, the topic has focused mainly on real sector SMEs.

Extant studies have sought to explain why firms engage in collection of methods aimed at minimizing the impact of market imperfections such as information asymmetries and high transaction costs (Harrison & Mason, 1997; Winborg and Landstrom, 2001). There are a number of quantitative studies that test for a link with the usefulness and predictive value of financial bootstrapping techniques among SMEs. One such studies is Ekanem (2005) which document findings from a study of investment decision making process in manufacturing enterprises amongst printing and clothing industries in the UK. The responses from interview and observation suggests that owner-managers predominantly use bootstrapping techniques for their investment appraisal rather than more formal methods suggested in the financial management literature. The results of content analysis, pattern matching and explanation-building techniques reveal that, in particular, owner-manager firms often rely on past experience in their investment decision making process which involves learning from previous financing decisions and mistakes. One question is that if the primary cause of small enterprises failure is the inability to raise external finance through debt and equity (Berger & Udell, 2002), bootstrapping should result in the likelihood of failure as it constrains performance at least in the short-run (Rutherford et al., 2012). A major deviation from this hypothesis however, is that bootstrapping is occasionally demonstrated as small firms' financial self-sustainability (Carter & Van Auken, 2005) charateristic. Survey evidence from Luxembourg is contained in Perry, Chandler, Yao, & Wolff (2011) from 364 new ventures. The authors ask respondents whether their monthly cash revenue exceeds monthly expenses. The correlations of the study variables show that the four independent variables, the percentage techniques used that are cash increasing and internal, cash increasing and external cost, cost decreasing and internal, and cost decreasing and external, are significantly and negatively correlated. The study concludes that external bootstrapping techniques, (both cash-increasing and cost decreasing), have positive association with successful organizational emergence. The question of whether legitimization activities undertaken with respect to a broader context of business community institutions improved a venture's likelihood of being perceived as an operating organization are explicit reports on views expressed in Tornikoski and Newbert (2007). The possible benefits of customer-related bootstrapping techniques is summarized by Ebben and Johnson (2006). In addition to reducing cost of capital, such techniques also reduces as a firm ages. On the other hand, the size of the market also determines the use of bootstrapping. Van Auken (2004) argue that a firm size and the time devoted to raising capital is negatively related to the use of bootstrapping finance.

Regarding financing options for SMEs in Nigeria, the results of empirical studies developed in Nigeria are also diverse. Gbandi & Amissah (2014) reported that

the funding of SMEs in Nigeria is very critical if they are to perform their role of growth and development of the nation's economy. For its part, Ayodeji (2010) found that ownership structure, enterpreneur's capacity development, source of seed capital and membership of trade/business associations evolve as predictors for SMEs financing in Kwara State while Onwuegbuchunam, Aghalugbulam, and Akujupbi (2013) indicates that risk perception atitude of banks, information constraints, lack of skills in SMEs financing and unfavourable environment are significant factors affecting banks' investments in shipping sector SMEs.

Currently, the overall bootstrapping-sector relationship remains unclear. Since findings of the collective field are somewhat ambivalent regarding bootsrapping-sector comparison, in the present study we consider a real and financial SMEs comparison in the use of bootstrapping. We submit that this is an important contribution to the literature because, while bootstrapping has long been discussed among researchers, no good deal of cross-sector SMEs comparison evidence exists. In conclusion, majority of prior quantitative evidence supports the idea that most small firms use bootstrapping but the limited survey evidence to date exclude this research gap. Our empirical study of professional and real sector SMEs involved in the use of bootstrapping as a financing option attempts to adress this issue. We therefore predict that professional service firms are more likely to use bootsrapping than real sector companies. Our hypothesis is thus:

H_1: *ceteris paribus,* the use of boostrapping techniques is higher for professional service SMEs than for real sector SMEs.

3. METHODOLOGY

This section quantifies the extent to which real and service sector SMEs make use of financial bootstrapping in Nigeria, and the determinants of their bootstrapping strategy. In an attempt to address the research hypothesis, we introduce mean difference tests to compare the use of bootstrapping between these sectors. The methods of bootstrapping adapted from earlier studies are shown in Figure 1.

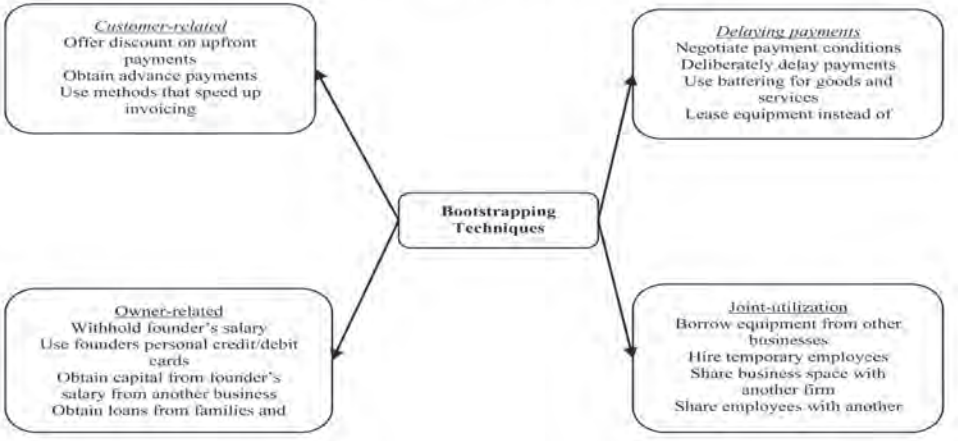


Figure 1. Conceptual research model

Source: Adapted from Winborg and Landstrom (2001)

Questionnaire design and survey construction

A questionnaire containing closed-item questions was designed. Questionnaire design was in part informed by measurement scales validated in prior studies within the SMEs bootstrapping literature. Customer-related bootstrapping was measured using items derived from Ebben and Johnson (2005). Delaying-payment, owner-related, and joint utilization uses items derived from Winborg and Landstrom (2001) and Perry et al. (2011). Each of the 20 micro-attributes as presented (see Figure 1) was accompanied by a five-point Likert-type scale ranging from 1 (= not at all essential) to 5 (=absolutely essential). Items were adapted or designed to the specific characteristics of the context of the research. A number of items were reversed-scored to reduce respondent acquiescence. To reduce bias towards the specific micro-attributes, items were randomized in the questionnaire. The instrument was piloted through two processes. First, officers from two professional bodies with a bias for corporate finance critiqued the questionnaire commented on the appropriateness of the wording in the *local context* since the items were derived from bootstrapping techniques identified in prior studies. Second, the questionnaire was reviewed by 13 senior credit officers from 6 Nigerian banks. At each stage the content of the questionnaire was revised accordingly.

Sample

As part of a larger study considering SMEs in Nigeria we estimate the population of SMEs in Lagos at 4,535 (NBS, 2010). Based on the authors' accessibility and use of judgemental sampling technique the first group composed of 153 manufacturing SMEs. For the second group, 119 interested professional accountancy firms were chosen at random. This two-group approach permits response comparisons between real sector and professional service SMEs. The instrument contained specific questions, allowing segmentation of the sample into the two groups. The first part of the instrument includes qualitative questions about the firm's incentive to use bootstrapping. The second part is directed at the enterprises accountants and includes quantitative questions that solicit for details of a firm's real and financial accounts over a four-quarter period in the previous year – 2014.

Inventory administration procedures

The questionnaire was accompanied by a covering letter describing the purpose of study, identifying the authors and their affiliation, and providing assurances of the confidentiality of responses. Two follow-ups were administered to non-respondents after 14-days (reminder letter), and 28-days (replacement questionnaire). Finally, respondents were given the option of receiving a summary report of the results of the investigation as an incentive to respond.

Response

From the sample of 272 owner-manager SMEs, 123 were eliminated due to incomplete information resulting in unusable responses. Another 46 were disregarded either because the company did not exist any longer or the contact person(s) had left the companies. One hundred and three (103) usable responses were returned (46 professional; 57 real sector), resulting in a response rate of 38%. Although the response rate may seem low, the nature of the subject and the fact that surveys of this nature usually receive response rates between 10% and 30% (Green & Albaum, 1988), mean that the response rate is aceptable. Following Freear, Sohl, & Wetzel, 1995, we test for response bias by comparing early (first 33%) and late (33%) respondents, using the Wilcoxon-Mann-Whitney non parametric test. This assumes

late respondents are similar to non-respondents (Dillman, 1978). Statistically significant differences between early and late respondents were only found for three out of the 21 items (□ = 0.05). Given the data available for comparison between the two groups , it is unlikely that response bias will challenge the validity of the results of the present investigation.

4. EMPIRICAL TESTING OF MICRO-ATTRIBUTES OF CROSS-SECTOR BOOTSTRAPPING TECHNIQUES

We begin with a simple mean difference test to look at the variation in the use of financial bootstrapping techniques between professional and real sector SMEs. An inspection of the results reveals that, for almost all the quarters, professional service firms have significantly higher average use of customer-related, delaying payments, and owner-related bootstrapping techniques. The difference in joint utilization technique is somewhat weaker but still reflects a similar pattern. This result clearly indicates that in comparison, professional service SMEs on average tend to use more bootstrapping techniques than do real (manufacturing and distribution) sector firms.

Table 1 reports the differences under the four bootstrapping techniques (Winborg, 2009). Table 1shows that, for the whole sample period (1st to 4th Quarter, 2014), the average ratio of customer-related bootstrapping methods is 16.7% for professional service firms, compared to 12.8% for real sector SMEs. Professional firms on average use 3.9% more customer-related techniques than real sectos SMEs; this difference is statistically significant at the 5% level. The difference is even larger at the delaying payments technique. Table 1 also shows that the average usage of delaying payments technique are 47.5% and 13.7% for professional and real sector SMEs respectively; the difference is 33.8% and is significant at the 5% level.

Table 1 Mean difference test on the use of bootstrapping across professional and real sector SMEs

Quarter		All	1st	2nd	3rd	4th
Customer-related	Professional	0.167	0.155	0.153	0.153	0.152
	real-sector	0.128	0.105	0.114	0.116	0.116
	Diff.	0.039***	0.050***	0.039***	0.037***	0.036***
		(10.58)	(10.58)	(4.25)	(4.14)	(4.07)
Delaying payments	Professional	0.475	0.369	0.363	0.415	0.45
	real-sector	0.137	0.153	0.152	0.128	0.119
	Diff.	0.338***	0.216***	0.211***	0.287***	0.331***
		(13.67)	(6.23)	(6.32)	(5.09)	(5.36)
Owner-related	Professional	0.022	0.018	0.023	0.025	0.026
	real-sector	-0.06	-0.025	-0.01	-0.017	-0.029
	Diff.	0.048***	0.043***	0.033***	0.042***	0.055***
		(11,65)	(4.18)	(3.19)	(4.31)	(5.5)
Joint Utilization	Professional	0.111	0.06	0.064	0.099	0.118
	real-sector	-0.012	-0.02	0.006	-0.004	-0.011
	Diff.	0.123***	0.080**	0.058*	0.103*	0.129**
		(5.51)	(2.09)	(1.77)	(1.9)	(2.26)

This table reports the mean difference test on the use of bootstrapping techniques between small professional accountancy firms and real sector SMEs. Column 3 reports the results for the wholesample period. Columns 4-7 reports for each sample quarter. Four measures of bootstrapping were evaluated: customer-related; delaying payments; owner-related; and joint utilization respectively. The third row for each bootstrapping measure reports the difference. *t* values are reported in parenthesis. ***, ** and * represent coefficient significance at the 1%, 5%, and 10% level respectively.

The result of the differences in owner-related and joint utilization methods as reported in Table 1 shows that average usage of owner-relaterd and joint utilization techniques are positive for professional SMEs but negative for real sector firms. To verify the consistency of this pattern across different sample quarters, columns 4-7 further report the mean difference test for each sample year. The results show that the observation that professional accountrancy SMEs use more of both approaches is quite consistent and significant across different sample quarters for the year. Conclusively, we retain the study hypothesis.

Regression Analyses

The mean difference tests show a significant difference in the use of financial bootstrapping methods between professional and real sector SMEs. Of course, professional and service firms could differ in various aspects, e.g. firm size, age, cash flow and investment pattern, which might affect the use of financial bootstrapping. In this section, we test the effect of industry (professional vs. real sector) on the use of bootstrapping but control for various firm characteristics that could potentially affect a firm's use of bootstrapping. The regression specification is:

$$BT_{i,t} = b_1 Industry_{i,t} + b_2 Size_{i,t-1} + b_3 Age_{i,t} + b_4 \frac{Capital}{Labour}_{i,t-1} + b_5 \frac{Cash\ Flow}{TotalAssets}_{i,t} \qquad (1)$$

where dependent variable, $BT_{i,t}$ is firm *i's* bootstrapping at time *t*. The four measures are employed to assess the use of bootstrapping: customer-related, delaying payments, owner-related, joint utilization Positive bootstrapping indicator is equal to 1 if a firm uses any of the techniques, and 0 otherwise. The independent variable of central interest, $Industry_{i,t}$ is a dummy variable indicating a firm's industry, which is equal to 1 if the firm is a professional service and 0 if otherwise. Other controlling variables are conventional and include $Size_{i,t-1}$ is the lagged firm's size measured by the number of employees; $Age_{i,t}$ is the firm's age measured by the length of time a firm has existed. All the regression parameters were theoretically expected to be positive and statistically significant. In the absence of effective legal enforcement, the use of bootstrapping relies solely on SMEs circumstance. Professional service firms usually have higher margins than do real sector SMEs, an indication that these accountancy firms expend less on overheads when compared to manufacturing and distribution SMEs. In recent time Stanbic-IBTC launched a 55-days interest free credit facility up to the tune of N200, 000 and N500,000 for associate members and fellow members of the Institute of Chartered Accountants of Nigeria (ICAN) respectively (ICAN-SGCCG, 2015). Professional accountancy firms have less need for bank facility; though the current study did not place any emphasis on how much of this credit-line has so far been explored.

The determinants of the use of bootstrapping are shown in Table 2. Columns 2 and 3 report results on the determinants of customer-related and delaying payment techniques. Columns 4 and 5 report results on the determinants of owner-related and joint utilization techniques. Inspection of the results reveals that the variables, $Industry_{i,t}$ is significantly positive and consistent across different techniques of bootstrapping. For example, in column 4 on the determinants, the coefficient on $Industry_{i,t}$ is -0.043, suggesting that real sector SMEs on average have 4.3% less owner-related bootstrapping method in use, other things being equal. The effects of

firm size and age are significant for some measures of bootstrapping. As a robustness check, we remove observations with extreme values of cash flow and capital labour ratio (outside of 1% tails in the distributions) and find the results remain very similar. The results suggest that the industry is a primary determinant of the use of financial bootstrapping for Nigerian SMEs. Thus the regression results are consistent with the simple mean difference test and show that professional services SMEs use more bootstrapping techniques than real sector SMEs, even after controlling for the various firm characteristics.

Table 2. Determinants of bootstrapping amongst professional and real sector SMEs

Explanatory variables	Customer-related	Delaying-payments	Owner-related	Joint-utilization
Industry	0.123	0.214	-0.043	0.118
	(1.58)	(6.03)	(2.56)	(3.2)
Size	-0.011***	-0.017	0.002	0.092
	(-2.49)	(-0.55)	(0.32)	(0.53)
Age	-0.011	0.174***	-0.009	-0.291
	(-1.38)	(3.28)	(-0.96)	(-0.66)
Capital/labour	-0.0002	-0.0002	-0.00001	-0.004*
	(-3.75)	(-0.73)	(-0.16)	(1.50)
Cash flow/total asset	0.018	-0.065**	-0.087***	-3.788**
	(0.78)	(-2.02)	(-2.83)	(-2.52)
R^2	52.6%	33.6%	42.2%	48.5%
N	103	103	103	103

This table reports the determinants of the use of bootstrapping. The regression specification is $BT_{i,t} = b_1$ Industry$_{i,t} + b_2$Size$_{i,t-1} + b_3$Age$_{i,t} + b_4$Capital/Labour$_{i,t-1} + b_5$ Cash flow/total asset$_{i,t}$.

The model has relatively high explanatory power. For example, the main specification in column (1) has an adjusted R-squared of 53%. This significant explanatory power is replicated in all other columns, i.e. 34%, 42%, and 49% respectively.

5. CONCLUSION

The current study contributes to the extant literature in several important dimensions. How SMEs in Nigeria sustain their growth has been an interesting but puzzling question. Using firm level data, our study directly tests such a conjecture and shows that SMEs actively exploits non-standard financing channels such as bootstrapping to finance their growth. Our study, from a different angle, provides evidence on the use of bootstrapping as a substitute for bank facilities in developing economies. Moreover, there is a clear difference in the use of bootstrapping techniques between real sector and professional service SMEs, which avoids the ambiguity in the measurement of financial constraint. Industry-specific factors are expected to influence managers' choice of bootstrapping methods. We find that the use of financial bootstrapping amongst small professional public accountancy firms is associated with size, age and cash flow, suggesting the convergence of owner-manager interests. Further, in a sample of SMEs that use bootstrapping; we find that real sector (manufacturing and distribution) financing activities have a negative effect.

This study is subject to a number of limitations. First, we focus on how bootstrapping exists among SMEs in Nigeria. However, other factors may determine the use of this financing technique outside our variables of interest. For example, SMEs may differ substantially in shorter financing techniques that are beyond the scope of this paper. Further, an endogeneity problem may exist in our model. For example, firms that choose bootstrapping differ substantially from those that do not in aspects of corporate governance, capital structure, market and clientele characteristics. In addition, this study might suffer from measurement error problems. Although we measure determinants of bootstrapping from different angles, they may not fully reflect managerial perception of the use of bootstrapping. Nevertheless, the consistent results we obtain from the tests address the overestimation problem. Finally, the sample consists of 103 SMEs, which limits the generalizability of the results. Future research could focus more on Micro-Small-and Medium Enterprises (MSMEs) to explore the incentive mechanism in a broader sample. Regardless of these limitations this study provides an empirical insight in entrepreneurial financing dynamics.

REFERENCES

Ayodeji, A. R., & Balcioglu, H. (2010, June). Financing industrial development in Nigeria: A case study of the small and medium enterprises in Kwara State. *Global Journal of Management and Business Research, 10*(3), 46-60.

Berger, A., & Udell, G. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking and Finance, 22*(6-8), 613-673.

Bhide, A. (1992). *Boostrap finance: The Art of Start-ups.* Harvard Business review, Harvard Business School.

Carter, R., & Van Auken, H. (2005). Bootsrap financing and owners' perception of their business constrains and opportunitties. *Enterpreneurship and Regional Development, 17*, 129-144.

Cassar, G. (2004). The financing of business start-ups. *Journal of Business Venturing, 19*(2), 261-283.

Chaganti, R., Decarolis, D., & Deeds, D. (1995). Preditors of capital structure in small ventures. *Entrepreneurship Theory and Practice, 20*(2), 7-18.

Dillman, D. A. (1978). The design and administration of mail surveys. *Annual Review of Sociology, 17*, 225-249.

Ebben, J., & Johnson, A. (2005). Bootstrapping in small firms: an empirical analysis of change over time. *Journal of Business Venturing, 21*, 851-861.

Ekanem, I. (2005). Bootstrapping': the investment decision -making process in small firms. *The British Accounting Review, 37*, 299-318.

Freear, J., Sohl, J., & Wetzel, W. (1995). Angels: Personal investors in the venture capital market. *Entrepreneurship and Regional Development, 7*(1), 85-94.

Gbandi, E. C., & Amissah, G. (2014, January). Financing options for small and medium enterprises (SMEs) in Nigeria. *European Scientific Journal, 10*(1), 327-340.

Green, P., & Albaum, D. S. (1988). *Research for marketing decisions.* (E. Cliffs, Ed.) NJ: Prentice Hall International.

Grichnik, D., & Singh, L. (2010). Resource bootstrappingof nascent entrepreneurs: Conscious entrepreneurial decision or forced reaction? *Frontiers of Entrepreneurship Research, 30*(12), 1-9.

Harrison, R., & Mason, C. (1997). Entrepreneurial growth strategies and venture performance in the software industry. *Paper Presented at the Babson Entrepreneurship Research Conference* . Wellesley, M.A.

ICAN-SGCCG. (2015, March). ICAN-STANBIC IBTC Gold Credit Card.

NBS. (2010). *Survey report on Micro, Small and Medium Enterprises (MSMEs) in Nigeria.* National Bureau of Statistics in collaboration with the small and medium enterprises development agency of Nigeria (SMEDAN).

Onwuegbuchunam, D. E., Aghalugbulam, B. C., & Akujupbi, C. (2013). SMEs financing and development in Nigeria's shipping sector: A case study. *Advances in Management and Appled Economics, 3*(6), 143-157.

Payne, J. D. (2007). Entreprenuer and Financing strategies. *Journal of Business Venturing, 12*(2), 13-22.

Perry, J. T., Chandler, G. N., Yao, X., & Wolff, J. (2011). Bootstrapping techniques and new venture emergence. *New England Journalof Entrepreneurship, 14*(1), 1-12.

Rutherford, M. W., Coombes, S. M., & Mazzei, M. J. (2012, September 6). The impact of bootstrapping on new venture performance and survival: A longitudinal analysis. *Frontiers of Entrepreneurship research, 32*(2).

Shane , S. A. (2008). *The illusions of entrepreneurship.* New Haven, CT: Yale University Press.

Tornikoski, S. L., & Newbert, E. T. (2007). Exploring the determinants of organizational emergence: A legitimacy perspective. *Journal of Business Venturing, 22*(2), 311-335.

Van Auken, H. E., & Carter, R. (1989). Acquisition of capital by small business. *Journal of Small Business Management, 27*(2), 1-9.

Winborg, J. (2009). Use of financial bootstrappping in new businesses: A question of last resort? *Venture capital, 11*(1), 71-83.

Winborg, J., & Landstrom, H. (2001). Financial bootstrapping in small businesses: examining small business managers' resource acquisition behaviors. *Journal of Business Venturing, 16*, 235-254.

APPENDIX

Questionnaire Used In The Study

For each of the following methods of financial bootstrapping, kindly indicate: the extent of use and significance in your business finance.

Key:

*NA – Absolutely not essential
NA – Not essential
N – Neutral
E – Essential
AE - Absolutely essential

S/N	STATEMENT	*NA	NA	N	E	AE
1	Customer-related bootstrapping Offer discount on upfront payments Obtain advance payments Use methods that speed up invoicing Use interest on overdue payments Cease business with late payers Choose customers who pay quickly					
2	*Delaying payments* Negotiate payment conditions Deliberately delay payments Use battering for goods and services Lease equipment instead of buying Buy used instead of new equipment					
3	Owner-related Withhold founder's salary Use founders personal credit/debit cards Obtain capital from founder's salary from another business Obtain loans from families and friends					
4	Joint-utilization Borrow equipment from other businesses Hire temporary employees Share business space with another firm Share employees with another firm Share equipment with another firm					

If you have additional comments to make, please use the space provided below.