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The Intermediation Functions of Finance Companies and Economic Growth: Issues, Theory and Empirical Evidence from Nigeria

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Abstract This paper examines the linkage between finance companies intermediation functions and economic growth in Nigeria. Using an annual time series data spanning the period of 1992 -2014 with the application of the estimation techniques of ordinary least square (OLS), co integration test, alongside granger causality test. The Global statistic results indicates that about 80% of the variations in GDP for the estimation period were captured by the explanatory variables. The relative statistic results showed evidence for strong and positive correlation between NLA and GDP in both short run and long run. Causality runs Bi-directionally between INV and GDP and Uni-directionally between NLA and GDP. The study conclude that financial intermediation functions of finance companies has a prominent role in determining the performance of the Nigeria economy. As such there should be an effective regulatory framework for finance companies operations in Nigeria with the view of improving financial intermediations services. It further recommends that there should be collaboration between finance companies and other financial institutions with the view of building a robust financial system in Nigeria. By ways of policy statement public awareness on the existence and function of finance companies be made to increase their patronage.

Keywords: *intermediation, finance companies, economic growth, Nigeria*

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1. Introduction

Institutional funds mobilization and investments are the hallmarks of the financial intermediation operations of any financial intermediaries [19]. As such Iwedi and Igbanibo [26,27] suggests that financial intermediation could serve as a catalyst for economic growth and development by efficiently allocating funds mobilized from the surplus economic units to deficit units through the process of intermediation.

Finance companies play complementary roles to banks, bridging financing gaps and meeting the financial needs of its target customers. However, Finance Companies have not demonstrated the necessary capability to thrive in this space which has resulted in a largely underperforming sub-sector. A Finance Company unless otherwise stated, means a person or company licensed to carry on Finance Company business. Finance Company Business means the business of providing financial services for consumers and to industrial, commercial, or agricultural enterprises (CBN, 2013). They are institutions that specialize in short term non-bank financial intermediation. They mobilize funds from the investing public in form of borrowing and provide, among other facilities for LPO and project financing, equipment leasing, and debt factoring. They reconcile the different needs of borrowers and lenders by transforming small-size, low-risk and highly liquid deposits (bank liabilities) into loans (bank assets), which are of larger size, higher risk and illiquid (i.e. transforming function).

The development of money market (which finance companies are participant) smoothen the progress of financial intermediation and boosts lending to the economy and improves the country's economic and social welfare [26,27]. Finance companies play a key role in fulfilling the gap of financial services that are not generally provided by the banking sector. The competition among non-bank financial institutions such as development finance institutions, insurance companies, pension funds, mortgage institutions, specialized banks and finance companies, is increasing over the years, which is forcing them to diversify to a wider range of products and services and to provide innovative investment solutions. Finance companies appear to offer flexible options and highly competitive products to help customers meet their operational and financial goals. Finance companies also create room to channel funds from lenders to borrowers, it mobilize fund from the surplus sector of the economy and channel it to the deficit sector of the economy. The importance of finance companies can be emphasized from the structure of the financial system, in the financial system in most countries commercial banks have emerged

in a dominant role in mobilizing funds and using these resources for investment.

Due to the structural limitations and rigidity of different regulations, banks could not expand their operations in all expected areas and were confined to a relatively limited sphere of financial services. Moreover, their efforts to meet long term financing with short term resources may result in asset-liability mismatch which can create pressure on their financial lease. These drawbacks led to the emergence of non-bank financial institutions for supporting industrialization and economic growth of the country [12]. It is on this backdrop this study is carried out to estimate and examine the relationship between financial intermediation functions of finance companies and the Nigeria economy.

2. Literature Review

2.1. Theoretical Underpinnings

The theory of financial intermediation was first formalized in the works of Goldsmith [21], Shaw [47] and Mckinnon [33], who see financial markets (both money and capital markets) playing a pivotal role in economic development, attributing the differences in economic growth across countries to the quantity and quality of services provided by financial institutions. Supporting this view is the result of a research by Nwaogwugwu, [36] and Dabwor [15] on the Nigerian stock market development and economic growth, the causal linkage. However, this contrasts with Robinson, who argued that "financial markets are essentially hand maidens to domestic industry, and respond passively to other factors that produce cross–country differences in growth. Moreover there is general tendency for supply of finance to move along with the demand for it. The same impulse within an economy, which set enterprises on foot, makes owners of wealth, venturesome and when a strong impulse to invest is fettered by lack of finance, devices are invented to release it. The Robinson school of thought therefore believes that economic growth will bring about the expansion of the financial sector. Goldsmith [21] attributed the direct correlation between the level of real per capita GNP and financial development to the positive effect that financial development has on encouraging more efficient use of the capital stock. In addition, the process of growth has feedback effects on financial markets by creating incentives for further financial development. Mckinnon [33] in his thesis argued that there is a complimentary relationship between physical capital and money that is reflected in money demand. This complimentarity relationship according to Mckinnon [33] links the demand for money directly with the process of physical capital accumulation mainly because the conditions of money supply have a first order impact on decision to save and invest.

2.2. Theoretical Literature

Generally, finance companies mobilize fund from the surplus sector of the economy and channel it to the deficit sector of the economy. According to Lemuel [30]. These companies focus on short-term, non-bank financial intermediation by mobilizing monetary resources from the investing public in form of borrowing and provide, among others, facilities for local purchase order (LPO) and project financing equipment leasing and debt factoring. They are under the direct control and supervision of the CBN. Finance companies are institutions whose activities involve holding money balance and borrowed money from individual and other institutions with the aim of creating loans [40] Finance companies thus through their activities accumulate capital which are channelled to the productive sectors for increased productivity and output. Isern [24] observed that finance companies have in recent years been relevant in the financing of small and medium scale enterprises. This has led the CBN along with the Finance Houses Association of Nigeria (FHAN), to look at ways to strengthen and reposition the sub-sector.

Finance companies in Nigeria are non-bank financial intermediaries involved in funds mobilization particularly short-term fund, placement and funds management project financing, equipment leasing, debt factoring and granting credit. [7,8] and Enofe, Osa-Erhabor and Ehiorobo, [18]. Finance companies are statutorily barred from accepting deposits and undertaking foreign exchange transactions as stipulated in the guidelines for their operations. The CBN is responsible for monitoring finance companies operation to ensure that they conform to specified regulation to avoid financial distress in the sub-sector.

2.3. Finance Companies and Nigeria Economic Development

Finance companies emerged in Nigeria in 1959 with the formation of bent worth finance limited [40]. The main business being the provision of finance by way of hire purchase and equipment leasing facilities, principally to those engaged to the transport and allied industries. Since then, the number of finance houses increased tremendously. According to Onoh [45], finance houses generally were under no specific regulatory and supervisory body they began to perform like banks but unlike banks they were not regulated. By 1973, there were at least 23 companies that provided consumer credit facilities. Even though they did not function in any consistent and formal manner, they were nevertheless in existence to give assistance to companies which were unable to finance the purchases of leasing arrangements [42]. But between 1986 and 1990, NDIC Annual Report shows that 100 finance houses were in existence of which 63 had fully complied with the registration requirement.

During 1991, the place of finance companies in Nigeria financial system was the main-focus especially when the bank's lending rate was pegged at 21 percent since finance houses were not subjected to similar ceiling. The role and developmental activities of finance companies were not put on record until 1991 when they come under the regulation of the CBN. However, literatures have shown that the limited nature of the traditional banking system and high lending rate charged by banks during the structural adjustment programme (SAP) era brought the finance companies into the lime-light and as an important institution in the Nigerian financial system [30,45].

Finance companies through their act as suppliers of loans and credit facilities ensures financial deepening in Nigeria which implies the ability of financial institutions in general to effectively mobilize financial resources for

development [50]. CBN (2014) report shows that total assets changed from #114,920.7- #119,589.6. Compared to #118,136.40 to #113,781.60 in 2009-2010. CBN (2014) report also shows that finance companies domestic credit increased from #1,512.8 million in 1992 to #48,808.7 million in 2014. By 2012, finance companies have played an encouraging role in economic development through domestic credit valued at #60,163.5 million. And in 2014 ₦68,967.3, although within these periods the number of finance companies operating in Nigeria fluctuated. CBN [9] report further shows that out of 618, finance companies that were registered in 1992, only 102 were re-registered in 2002 following the revised guideline of the CBN in 2002 while 75 finance companies were in existence by 2008.

Following the recent Routine Examination carried out by the CBN on the finance companies under its supervisory purview, fifty five (55) of the companies were found to be actively engaged in the finance company business while four (4) others were undergoing restructuring. Consequently, only fifty nine (59) finance companies with CBN licenses are the institutions currently approved to carry on finance company business in 2010.

2.4. Empirical Literature

There is a scanty empirical works on financial intermediation functions of finance companies in Nigeria. However, a good number of studies have shown that there is a relationship between finance and economic growth. Some of these works include; Jayaratne and Strathan [29], Demirgue-kunt and Maksimovic [16], and Rajan and Zingales. King and Levine conduct a pooled cross-country time-series survey of eighty countries for the period 1960 -1989 with a view to establishing the relationship between financial development and economic growth. Four variables were developed and used as proxy for financial development. These include; financial depth, relative importance of specific financial institution, proportion of credit allocated to the private sector, and the ratio of claims on the non-financial private sector. On the other hand, the average long-run real per capital GDP, the rate of physical capital accumulation, the ratio of domestic investment to GDP, and residual measure of improvement in the efficiency of physical capital allocation were used as a proxy for economic growth. Using the cross-country regression and some other statistical test, this study established that the four indicators of financial development were positively and statistically related to growth, and other indicators of economic growth.

Jayaratne and Strathan [29] affirm that financial development impacts positively on economic growth but with a clause that there is an improvement in the quality of bank lending. Using the bank deregulation reform in the US as a case-study, it was established that the rate of real, per-capita growth in income increased significantly. This impact of the reform in the financial system on economic growth was attributed to the improvement in the quality of bank lending, and not the increase in volume of bank lending.

Odedokun [38], in his study, emphasised that even though financial intermediation promotes economic growth, the growth-promoting effects are more pronounced in the low-income countries. Using a cross-country data analysis of 71 less developed countries (LDCs) for the period 1960 to 1980, study expanded the neo-classical one-sector aggregate production function with financial development as an input. Two models were derived with economic growth as the dependent variable, while the regressors include; labour force growth, investment-GDP ratio, real export growth, and financial depth. The models were estimated using the ordinary least squares (OLS) technique, as well as the Generalized Least Squares (GLS) technique. Besides the strong positive relationship that manifested between financial intermediation and economic growth, the study establishes that the impact of financial intermediation is at par with export growth and capital formation. However, its impact on economic growth is superior to labour force growth.

Rajan and Zingales seek to establish the impact of financial development on industry-specific growth. This necessitated a cross-country, cross-industry study. The primary hypothesis was, “industries that are more dependent on external financing will have relatively higher growth rates in countries that have more developed financial market.” The study designed a multiple regression model, which specified growth as the dependent variable and the financial development, external finance dependency, country specific factors, and industry-specific factors. The average annual real growth rate of value-added was used as a proxy for growth, while value-added and gross-fixed capital formation for each industry obtained from the Industries Statistics Year Book (1993). Two finance indicators were used as a proxy. These are capitalization ratio and accounting standards. The study asserts that financial development enhances growth in indirect ways.

Demirgue-Kunt & Maksimovic [16] carried out a firm level-based study to justify their assertion with respect to the relationship between finance and economic growth. This study shows that a developed financial system and legal system stimulates growth. This was achieved by using cross-sectional data drawn from thirty countries (developed and developing) for the period 1983 to 1991. They are of the view that an active stock market is an indication of a well-developed financial system. While the firms in a country with a high rate of compliance with the rules and regulations have access to the capital market, the developed financial system will ensure growth of these firms. Hence, finance stimulates growth.

Levine, Loayza, and Beck [32] changed the face of the argument on the relationship between financial intermediation and economic growth. This study seeks to establish the impact of the endogenous component of financial intermediation on economic growth. A robust methodology, which comprises two models and two estimation techniques, was employed. The first model, which defines economic growth as function of finance indicators and a vector of economic growth determinants, was estimated using the pure cross-sectional estimation technique. The second model is a dynamic panel model and is estimated using the Generalized Methods of Moments (GMM). Both tests confirm the strong positive impact of the endogenous components of financial intermediation on economic growth. They, however, noted that countries with high priority for creditors’ protection, strong will to enforce contracts, and unambiguous

accounting standards have the potential for a developed financial intermediation.

McCaig and Stengos (2005) introduced more instrumental variables with a view to establishing a more robust empirical relationship between financial intermediation and economic growth. The study uses a cross-country analysis of 71 countries for the period 1960 to 1995. A linear regression model, which defines economic growth as a function of financial intermediation and a set of conditioning variables, was estimated using the Generalized Method of Moments (GMM). While the instrumental variable introduced included; religious composition, years of independence, latitude, settler mortality, and ethnic fractionalization, three conditioning variable were also used. These include; simple sets (initial GDP, and level of education), the policy set (simple set, government size, inflation, black market premium, and ethnic diversity), and the full set (simple set, policy set, number of revolution/ coup, number of assassination per 1000 inhabitants, and trade openness). This study also supports the argument that a positive relationship exist between financial intermediation and economic growth. However, it emphasized that this will be true if financial intermediation is measured by liquid liabilities and private credit as a ratio of GDP, while it will be weaker if it is measured using the Commercial-Central Bank ratio.

Hao [23] seeks to establish the relationship between financial intermediation and economic growth, using a country-specific data from China. The study focused on the post-1978 reform period, using provincial data (28 Provinces) over the period 1985 to 1999. The study employed the use of linear model, which expresses economic growth as a function lagged economic growth, financial development indicators (banks, savings, and loan-budget ratio), as well as a set of traditional growth determinants (population growth, education, and infrastructural development). The study uses the one-step parameter estimates for the Generalized Method of Moments (GMM) estimation and finds that financial intermediation has a causal effect and positive impact on growth through the channels of house-holds' savings mobilization and the substitution of loans for state budget appropriations. However, the study reveals that bank, as an indicator of financial development, is significant but negatively related to growth. This was attributed to the inefficiency in loan distribution and the self-financing ability of the provincial governments.

Romeo-Avila also confirms the positive impact of finance on growth. He investigates the relationship between finance and growth, with emphasis on the effect of financial deregulation and banking law harmonisation on economic growth in the European Union. The study establishes that financial intermediation impacts positively on economic growth through three channels.

The study by Deidda is quite informative and unique. It is a micro-based study and uses the inter-temporal approach to explain the theoretical rationale of the impact of financial intermediation on economic growth. It assumes a transition from period 1 (financial autarky) to the period 2, which is the period when financial intermediation is attained. Although this study is theoretical in nature, the General Equilibrium Analysis was used and it concludes that the growth effect of costly financial development is ambiguous when regime switch is associated with the adoption of more capital intensive technology.

Acha [1] investigated the role banks play in economic growth. It used bank deposits and bank credit to the private sector as variables for bank intermediation and real gross domestic product (RGDP) to proxy economic growth. The Regression of RGDP as dependent variable against bank deposit and credit confirmed that banks through their intermediation function contribute to economic growth in Nigeria.

Acha [2], studied whether banks through their financial intermediation activities (savings mobilization and lending) cause economic growth is the theme on which this study was based. Data on gross domestic product (GDP), credit to private sector (CPS) and total bank deposit (DPS) were obtained from Central Bank of Nigeria (CBN) statistical bulletin and used to compute savings ratio (SR) and credit ratio (CPR). A time frame of 1980-2008 was adopted. The hypotheses that no causal relationship exist between savings mobilization and credit on one hand and economic growth on the other were tested. The Granger Causality Test was used to test these hypotheses. It could not identify any significant causal relationship between banks' savings/credit and economic growth. The absence of such a relationship was conjectured to be due to the economies developmental stage characterized by infrastructural decay and the inefficient utilization of mobilized deposits.

Shittu [48] examine the impact of financial intermediation on economic growth in Nigeria. Time series data from 1970 to 2010 were used and were gathered from the CBN publications. For the analysis, the unit root test and cointegration test were done accordingly and the error correction model was estimated using the Engle-Granger technique. The study established that financial intermediation has a significant impact on economic growth in Nigeria.

Omodugo, Kalu and Anowor [44] studied financial intermediation and private sector investment in Nigeria. They adopted private investment (PRIVET) as the regressand and financial savings as a ratio of real gross domestic product (FS/RGDP), credit extended to private sector by deposit money banks (CEPS), prime lending rate (PLR) & real gross domestic product (RGDP) as the regressors. The study employed econometric method to construct a multiple regression model to analyze the long-run relationships among variables. The results showed that three out of the five coefficients are statistically significant at 5% level. CEPS and PLR conformed to the theoretically expected signs, while FS/RGDP, RGDP and DUM did not. Hetroscedasticity test carried out suggests that OLS assumption of constant variances over time was not violated.

Uremadu examines the effect of financial intermediation and government regulations on financial deepening and growth in Nigeria using time series data and OLS regression methodology. In particular, macroeconomic data covering 24 years were used to conduct his investigations and analysis. His findings show that government bank regulations proxy by total balances with the central bank lead financial deepening in Nigeria. It is then followed by another surrogate of a financial intermediation variable (i.e. total demand deposit liabilities) as 2nd; cash reserve ratio representing another surrogate of a regulatory variable ranked 3rd, while total bank credit

to domestic economy that represents another surrogate of financial intermediation ranked 4th in their descending order of magnitude. He also found negative influence of cash reserve ratio and total bank credit on financial deepening and growth.

Agbada and Osuji, [20] paper seeks to analyze empirically the trends in Financial Intermediation and Output (GDP) in Nigeria from the banking crises period beginning from 1981 to 2011. In doing so, the study used the endogenous components of financial intermediation such as Demand Deposits (DD), Time/Savings deposits (T/Sav) and Credits (Loans and Overdraft) as explanatory variables to predict the outcome of our dependent variable Output (GDP). Data were sourced from CBN statistical Bulletin, 2011 and regression estimation was carried out using IBM SPSS statistics 20. The findings suggests that though there exist a positive growth relationship between financial intermediation and output in Nigeria, there also exist elements of negative short-run growth relationship, especially for the periods that suffered financial shocks resulting from the global financial crisis and perhaps, numerous bank failures. These findings may serve to buttress existing research outcomes and will be relevant to regulatory authorities in formulating policies that are capable of positively enhancing financial intermediation and output growth in the economy.

Enofe, Osa-Erhabor and Ehiorobo [18], empirically studied Central Bank of Nigeria (CBN) regulatory activities, finance house activities and economic development, within the period 1992-2010, using gross domestic product GDP as a measure of economic development, while Activities of Finance houses proxy by domestic credit and total assets, CBN activities proxy by the shareholders fund and minimum paid up capital, estimation of regression models and subsequent analysis of results using micro fit 4.1 econometric, statistical analytical tool. The findings indicate that significant relationships existed between Finance house activities and economic development, and CBN regulatory activities in finance house has no significant relationship. Therefore, this calls for policy options that would favour the encouragement of existing finance houses and licensing of new ones to adequately carter forthe needs of the overall economy.

Andabai and Tonye, [3] examined the relationship between financial intermediation and economic growth in Nigeria using data spanning (1988-2013). Using vector error correction model and the test for stationarity to test the hypotheses, it proves that the variables are integrated in the order which implies that unit roots do not exist among the variables. There is also long-run equilibrium relationship between economic growth and financial intermediation and the result also confirms about 96% short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicates that about 89% of the variations in economic growth are explained by changes in financial intermediation variables in Nigeria.

Iwedi and Igbanibo [26,27] paper models the relationship between financial intermediation functions of banks and economic growth in Nigeria using data spanning (1970-2014). Credit to private sector (CPS), banks deposit liabilities (DLS), and money supply (MOS) were used as proxy for bank financial intermediation functions while gross domestic product represents economic growth. The econometric tools of the regression analysis and cointegration test were used. The analysis revealed that no short run relationship existence between CPS, DLS and GDP in Nigeria. However, the analysis revealed a long run relationship between bank financial intermediation indicators and gross domestic product in Nigeria.

3. Methodology

The study employed pre estimation analysis such as descriptive statistics and stationarity test. This is to reveal the behaviour of the data on the variables. The econometric tool of the regression analysis model, which include regression analysis for testing the short run relationship between the variables, co-integration for testing the long run relationship between the variables, and granger causality test. Two basic types of time series models exist and these are Autoregressive (AR) Models and the Moving Average Process (MA). An AR model is one where the current value of a variable Y depends upon only the values that the variable took in previous periods plus an error term. Thus, an AR model of order P, denoted as AR (Ip) can be expressed as:

$$Y_t = \beta_0 + \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + \ldots + \phi_p Y_{t-p} + \varepsilon_4 \quad (1)$$

Where ε_4 is a white noise disturbance term. Alternatively, eqn (1) can be written as:

$$Y_t = \sum \phi_1 Y_{t-1} + \varepsilon_4 \quad (2)$$

Where β_0 is a constant and $\phi_1 \ldots . \phi_p$ are parameters of the model or using the lag operator, it becomes:

$$\sum^{q} Y_1 = \beta_0 + \phi_1 L_1 Y_1 + \varepsilon_4. \quad (3)$$

Or

$$\phi(L) Y_t = \beta_0 + \varepsilon_t$$

where

$$\phi(L) = \left(1 - \phi_1 L_1 - \phi_2 L_2 \ldots \phi_\rho L_\rho\right) \quad (4)$$

On the other hand, if Ut is a white noise process with E(Ut) = 0 and Var(Ut) = a2, then

$$Y_t = \beta_0 + U_t + \phi_1 U_1 U_{t-1} + \phi_2 U_{t-2} + \ldots + \phi_q U_{t-q} \quad (5)$$

is a qth moving average model denoted MA (q). eq. (5) can be restated as:

$$Y_t = \beta_0 + \sum_{i=1}^{q} \phi_1 U_{t-1} + U_t \quad (6)$$

Thus, a moving average (MA) model is linear combinations of white noise process such that Yt is a function of current and lagged values of a white noise disturbance process. Using the lag operator notation, equation (6) becomes:

$$Y_t = \beta_0 + \sum_{i=1}^{q} \phi_1 L U_{t-1} + U_t \quad (7)$$

Or as $Y_t = \beta_0 + \phi(L) U$

where

$$\phi L = \alpha_1 + \phi_1 L + \phi_2 L_2 + ... + \phi_q L_q \quad (8)$$

However, by combining this AR (p) and MA (q) models an ARMA (p,q) model is obtained. Thus, in an ARMA model, the current value of some series Yt depends linearly on its own previous values plus a combination of current and lagged values of a white noise error term. This can be stated as:

$$Y_t = \beta_0 + \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + ... + \phi_p Y_{t-p} + \phi_1 U_{t-1} + \phi_2 U_{t-2} + ... + \phi_q U_{t-q} \quad (9)$$

where

$$E(U_t = 0); E(U_t 2) = \beta_2; E(UtU3) = 0, t \neq s$$

It is evident from the foregoing that stationarity in a time series is a desirable property for an estimated AR model. The reason being that a model whose co-efficient are non-stationary will have a non-declining effect on the current values of Yt as time progresses which is counter productive, empirically defective and could lead to spurious regressions. The literature of financial econometrics is replete now with ample tests for stationarity in time series data as well as different treatments to induce stationarity. Hence, in this paper, the Augmented Dickey – Fuller (ADF) (1981), unit tests are employed to check whether the series data are stationary or not. That is, consider an AR (1) process:

$$Y_t = \beta + \phi Y_{t-1} + \varepsilon_4 \quad (10)$$

Where β and ϕ are parameters of the model and ε_4 is a white noise disturbance term. Yt is stationary, if and only if, -1<1 ϕ 1<1. However, if ϕ = 1, then Ytis a non-stationary series. That is, if the time series is started at some point (t), the variance of Xt increases steadily with time and goes to infinity. On the other hand, if the absolute value of 1 ϕ 1 is more than t, then the series Yt is explosive. Hence, the hypothesis of a stationary series is usually tested whether the absolute value 1 ϕ 1 is strictly less than unity. Thus, for testing unit root, Yt4 is subtracted from both sides of eqn.(10), then we have:

$$\Delta Y_t = \beta + \psi Y_{t-1} + \varepsilon_4 \quad (11)$$

Where $\Psi = (\phi - 1)$ and the null hypothesis can be tested as Ho: $\Psi = 0$. This unit root test is however only applicable where the series is an AR (1) process. For higher order serial correlation in the series, the assumption of white noise disturbance term is violated. However, the ADF test corrects for high order correlation by making the assumption of an AR(p) process as:

$$\Delta Y_t = \beta + Y_{t-1} + \sum_{i=1}^{q} Y_{t-j} + \varepsilon_4 \quad (12)$$

That is, the additional lagged terms are included to ensure that the errors are uncorrelated. Hence, if the calculated i=1ADF statistics is less than their critical values from the fuller's table, then the null hypothesis Ho: Y = 0 is accepted and the series are non-stationary or not integrated of order zero. Thus, to induce stationarity, many time series need to be appropriately differenced. Hence, a time series is said to be integrated of order d, if it has become stationary after differencing the d times. In this paper, we examine whether the time series are co-integrated by adopting the method of Granger (1969). That is, two or more variables are said to be co-integrated if each variable individually is integrated of order one, but a linear combination of the variables is integrated of lower order say zero.

Thus, a long-run relationship between the variables is present when there exists at least one co-integrating vector. That is, if Y1t and Y2t are co-integrated 1 (1) so that εt , 1(0), then this implies that there exists a long-run equilibrium between Y1t and Y2t to which the system converges overtime and the disturbance term can be construed as the disequilibrium error. The first step in the Engle and Granger (1987) co-integration method is to estimate the cointegrating equation.

$$Y_t = \beta_0 + \beta_1 X_t + U_t \quad (13)$$

and then to calculate the residual

$$U_t = Y_t - \beta_0 - \beta_1 X_t \quad (14)$$

Then we check the stationarity of the residuals. Hence, if Y jadn X are co-integrated the error term will be stationary and this is accomplished by testing the residuals of co-integrating regression for stationarity by performing ADF unit root tests.

3.1. Granger Causality Test

To determine the direction of causality between the variables, we employ the standard Granger causality test. (Granger, 1969). The test is based on vector error correction model (VECM) which suggests that while the past can cause or predict the future, the future cannot predict or cause the past. Thus, according to Granger (1969). X Granger causes Y if past values of X can be used to the past values of Y. The test is based on the following regressions:

$$Y_t = \beta_0 + \sum_{i=1}^{n} \beta_1 Y_{t-1} + \sum_{i=1}^{n} X_{\beta 1x} \mu_t \quad (15)$$

and

$$Y_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 Y_{t-1} + \sum_{i=1}^{n} X_{\beta 1x} Y_t \quad (16)$$

Where Xt and Yt are the variables to be tested while μt is the white noise disturbance terms. The null hypothesis $\alpha 1 = \beta 1 y = 0$ for all 1's is tested against the alternative hypothesis $\alpha 1^1$ 0 and $\beta 1^1$ ^{1} 0. If the co-efficient of $\alpha 1^1$ are statistically significant but that of $\beta 1^1 y$ are not, then X causes Y. If the reverse is true, then Y cause X. However, where both co-efficient of $\alpha 1$ and $\beta 1^1 y$ are significant then causality is bi-directional.

4. Data

The data used for the study is basically secondary in nature. This data is obtained from the publications of the Central Bank of Nigeria Statistical Bulletin (2014). Data were collected for the period of 1992 – 2014 on economic growth which is the explained variable. The real gross

domestic product is used as a proxy for this variable. On financial intermediation functions of finance companies, two indicators are used and are proxy by finance companies net loans and advance (NLA) and her investment (INV). These indicators constitute finance houses domestic credit which forms their intermediation functions.

4.1. Model Specification

Following the line of previous studies [18,48] the model is specified thus;

$$GDPt = f\{NLAt, INVt\} \quad (17)$$

Econometric transformation of eqn (17)

$$GDP = \beta_0 + \beta_1 NLA + \beta_2 INV + \mu \quad (18)$$

Variable Description:

GDP = Gross Domestic Product which proxies economic growth

NLA = Net Loans & Advances

INV = Investment

NLA & INV proxies for finance companies intermediation functions.

Table 1. Data on Gross Domestic Product and Finance Companies Financial Intermediation Functions Indicators

Years	GDP	NLA	INV
1992	532,613.80	1,132.1	380.7
1993	683,869.80	4,335.5	1,298.5
1994	899,863.20	3,453.9	1,333.8
1995	1,933,211.60	3,846.5	1,232.6
1996	2,702,719.10	2,447.8	1,519.7
1997	2,801,972.60	4,000.4	1,516.7
1998	2,708,430.90	3,471.6	643.3
1999	3,194,023.60	2,739.3	1,608.2
2000	4,537,640.00	4,664.4	606.5
2001	4,537,640.00	6,915.6	1,693.0
2002	5,403,006.80	4,101.5	2,189.9
2003	6,947,819.90	14,798.4	4,313.3
2004	11,411,066.90	14,561.5	5,488.9
2005	14,610,881.50	16,251.3	5,756.4
2006	18,564,594.90	23,845.8	8,756.1
2007	20,657,317.80	26,779.1	12,756.0
2008	24,296,329.30	50,387.8	34,442.3
2009	24,794,238.66	32,345.6	28,742.6
2010	29,205,782.96	30,646.3	27,123.3
2011	38,016,971.08	33,356.7	26,806.8
2012	40,566,273.48	23,772.2	16,868.3
2013	44,971,867.54	46,679.8	19,448.8
2014	52,670,645.64	48,808.7	20,158.6

Source: Central Bank of Nigeria (CBN) Statistical Bulletin (2014).

A. Graphical Analysis of Data

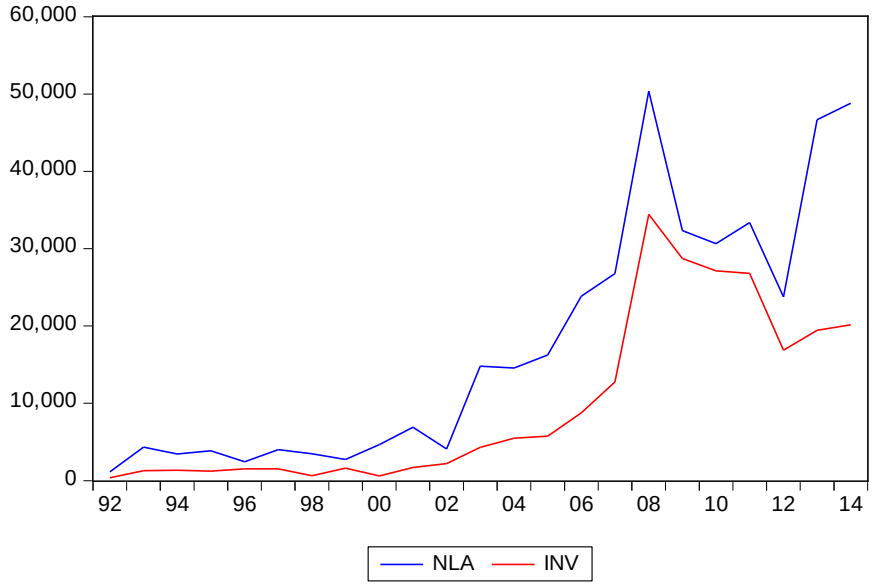

Figure 1.

Source: E-view Output

The graph above shows that the value of net loan & advances (NLA) and investment (INV) proxies for finance companies financial intermediation function maintained an irregular trend throughout the period of this study. In the year 1992, ***NLA*** was 1132.1 million, and it rose to 4,000.4 million in year 1997. It later declined to 2,739.3 million in 1999. It increase further increase to 30,646.3 million in the year 2010. It then stood at 48,808.7 million in year 2014. While values of investment (INV) had an irregular trend during the period chosen for study. In the year 1992, ***INV*** was 380.7 million, it then rose to 1516.7 million in year 1997 but later declined to 606.5 million in year 2000. It further stood at 27,123.3 million and 20,158.6 million between the year 2010 and 2014 respectively.

Table 2. Descriptive Statistics Result

	GDP	NLA	INV
Mean	15506469	17536.60	9768.883
Median	6947820.	14561.50	4313.300
Maximum	52670646	50387.80	34442.30
Minimum	532613.8	1132.100	380.7000
Std. Dev.	16077871	16300.91	11043.22
Skewness	0.934449	0.769482	0.942641
Kurtosis	2.622595	2.298869	2.422762
Jarque-Bera	3.483747	2.740828	3.725515
Probability	0.175192	0.254002	0.155244
Sum	3.57E+08	403341.8	224684.3
Sum Sq. Dev.	5.69E+15	5.85E+09	2.68E+09
Observations	23	23	23

Result extracted from the Eviews 8 Output.

4.2. Result Extracted from the Eviews 8 Output.

From Table 2 above, the average amount in Gross Domestic Product (GDP) Value for the 22 years period covered by this study is N15506469. While the Mean values of NLA and INV are N17536.60 and N9768.883, respectively. Gross Domestic Product (GDP) has the highest average value in the Model seconded by net loans & advances (NLA). The Median value best described the centers for each data series in the model, such that the values 6947820, 14561.50, and 4313.300 provides a more valid measure of the central location of the different time series – GDP, NLA and INV respectively. GDP has the highest maximum value of 52670646 seconded by NLA with a maximum Value of 50387.80 which was attained in the year 2014.

Gross Domestic Product (GDP) and net loan & advances (NLA) have the first two highest standard deviation in the Model. This suggests that GDP, NLA are the most volatile variables. This is manifested in the extent of their dispersion from the mean. The other variable INV, seem to be clustered more closely about the mean. Since the mean of each of the variable in the model is greater than the median, it suggests that the variables are skewed to the right towards normality

Based on Bowman-Shelton test for normality which is anchored on the closeness to zero (o) of the sample skewness and the closeness to 2 of the sample Kurtosis, the variables kurtosis are all greater than 2, as such, we can posit that the variables are leptokurtic in nature. This implies that they are with higher than normal kurtosis and the weight in the tail of their probability density function is larger than normal (New bold, 1995). The Jarque-Bera statistics, which is a test statistic for testing whether the series is normally distributed, measuring the difference of the skewness and kurtosis of the series with those from the normal distribution, is reported at 3.48 with a probability of 0.175 for GDP. It is reported for 2.74 with a probability of 0.25 for NLA and 3.73 with a probability of 0.16 for INV. Under the null hypothesis of a normal distribution, the Jarque-Bera statistic is distributed as with 2 degrees of freedom, the reported probability indicates that at 5% level of significance we cannot accept the hypothesis of normal distribution.

4.3. Stationarity Test Results

Table 3. Augmented Dickey-Fuller Test on NLA

NLA		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.567142	0.0000
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10%level	-2.646119	

Table 4. Augmented Dickey-Fuller Test on INV

INV		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.724363	0.0013
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10%level	-2.646119	

Table 5. Augmented Dickey-Fuller Test on GDP

GDP		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		4.765778	1.0000
Test critical values:	1% level	-3.769597	
	5% level	-3.004861	
	10%level	-2.642242	

SOURCE: Extracted from E-views Output.

The paper conducted stationarity test using Augmented Dickey-Fuller test. The results are shown in Table 3, Table 4 and Table 5 for each of the variables. As revealed, the GDP was stationary at level. The observed ADF statistic for GDP is 4.765778 which is greater than the Mackinnon critical values and thus the null hypothesis of non- stationarity are rejected, implying the absence of unit roots among the variables. While NLA and INV are all stationary at first difference. The ADF observed statistic for NLA & INV are -6.567142 and -4.724363 respectively. They were all greater than the MacKinnon critical values and thus null hypotheses of non-stationarity are rejected, implying the absence of unit roots among the variables.

Table 6. Regression Result

Dependent Variable: GDP

Method: Least Squares

Date: 09/04/15 Time: 19:37

Sample: 1992 2014

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NLA	939.1533	196.9332	4.768893	0.0001
INV	-90.62733	320.4936	-0.282774	0.7801
R-squared	0.812958	Mean dependent var		15506469
Adjusted R-squared	0.804051	S.D. dependent var		16077871
S.E. of regression	7117051.	Akaike info criterion		34.47683
Sum squared resid	1.06E+15	Schwarz criterion		34.57556
Log likelihood	-394.4835	Hannan-Quinn criter.		34.50166
Durbin-Watson stat	1.130990	F-statistic		256.059

SOURCE: E-views Output.

4.4. Global Statistic Results

Table 6 depict the global statistics. As shown, the observed degree of relationship between the two variables was quite high at an adjusted R-squared of 0.80. By implication, about 80% of the variations in GDP were explained by the model. This demonstrates a good fit as indicated by the F-statistic of 256.05, which is significant at 1% level. The log-likelihood ratio, akaike information criterion and Schwarz Bayesian criterion statistic all showed that the model has good forecasting ability.

4.5. Relative Statistic Results

The net loans and advances (NLA) variable recorded a coefficient of 939.1533 and standard error of 196.9332 and thus a t-statistic of 4.76. This is significant at 5% level of significance. Thus the NLA variable was positively and significantly related to GDP during the period of this study. The suggest that the level of economic growth in Nigeria is stimulated by the level of net loans and advances extended to private sector by finance houses, it further reveals that a unit increase in the level of loans and

advances (NLA) extended to the private sector is expected to stimulate economic growth by 939.1533. On the other hand a coefficient of -90.62733 for INV suggest that Finance House Investment exact negative influence on GDP. It goes further to suggest that one unit increase in the value of investment (INV) depresses the level of economic growth (GDP) by 90.62733.

4.6. Cointegration Test

Table 7. Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.818595	57.79895	29.79707	0.0000
At most 1 *	0.451885	21.95145	15.49471	0.0046
At most 2 *	0.358559	9.324789	3.841466	0.0023

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values.

Table 8. Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.818595	35.84750	21.13162	0.0002
At most 1	0.451885	12.62666	14.26460	0.0893
At most 2 *	0.358559	9.324789	3.841466	0.0023

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values.

From Table 7 and Table 8 it can be seen that the economic performance variable (GDP) is cointegrated with the net loans and advances and investments at 5% significance level. This indicates that a long-run equilibrium relationship exists between economic performance (GDP) of the Nigeria economy and finance house intermediations functions variables.

Table 9. Pairwise Granger Causality Tests

Date: 09/05/15 Time: 19:53

Sample: 1992 2014

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
NLA does not Granger Cause GDP	22	0.03276	0.8583
GDP does not Granger Cause NLA		8.98417	0.0074
INV does not Granger Cause GDP	22	0.22217	0.6428
GDP does not Granger Cause INV		1.19782	0.2874
INV does not Granger Cause NLA	22	0.92991	0.3470
NLA does not Granger Cause INV		3.00551	0.0992

SOURCE: Extracted from E-views Output.

From Table 9, the result reveals that at 5% level of significance, net loans & advances does not granger cause growth in Gross Domestic Product (GDP), but causality runs uni-directionally from Gross Domestic Product (GDP) to net loans & advances. This implies that growth in the output level of goods and services in the economy can trigger up an active economy, boost the desire for more investment, raise the productive capacity of the economy, influence and define the pattern/volume of loans & advances especially to the productive sector of the economy. Bi-directional causal relationship exist between investment (INV) and Gross Domestic Product (GDP), in that, INV leads GDP while causality also flows from GDP to INV.

5. Conclusion

This study models the relationship between finance companies financial intermediation functions and the Nigeria economy. Using a time series annual data from 1992- 2014. To show the robustness of results and findings, Ordinary Least Square (OLS), and Granger Causality Test were conducted alongside Johansen Cointegration Test. Generally, the empirical results were remarkable. The Global statistic results indicates that about 80% of the variations in GDP for the estimation period were captured by the explanatory variables. The relative statistic results showed evidence for strong and positive correlation between NLA and GDP in both short run and long run. Causality runs Bi-directionally between INV and GDP and Uni-directionally between NLA and GDP. The study conclude that financial intermediation functions of finance companies has a prominent role in determining the performance of the Nigeria economy. As such there should be an effective regulatory framework for finance companies operations in Nigeria with the view of improving financial intermediations services. It further recommends that there should be collaboration between finance companies and other financial institutions with the view of building a robust financial system in Nigeria. By ways of policy statement public awareness on the existence and function of finance companies be made to increase their patronage.

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