Deposit Money Banks and Economic Growth and Development in Nigeria

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Abstract
This paper examines the effect of deposit money banks intermediation role on economic growth and development in Nigeria. The main objective of the research was to ascertain the extent to which sartorial credit allocation by deposit money banks have influenced growth in the economy. Time series data covering the period 1973-2011 for deposits money banks credits in Nigeria and per capita gross domestic product were analyzed within the framework of Engle-Granger Representative Theorem the approach estimated a co-integrating regression using ordinary least square estimator, and then investigated the presence of a co-integration relation by examining the stationarity of the estimated residual series. The findings indicate that bank financing on production which consists of agriculture, forestry and fishery, manufacturing, mining and quarrying, real estate and construction sub-sectors is significantly promoting economic activity. Financing on general commerce, services and others sectors however, yields negative effect on economic activity within the sample period. The implication that can be drawn from this study is that to ensure that the banking system performs its role of credit allocation effectively it must channel funds into productive investment and more productive uses, deposit money banks should act as efficient financial intermediaries devoted to allocating resources to the most productive uses.

Keywords: Deposit money banks, economic growth, per capita gross domestic product, central bank of Nigeria.

1. Introduction
One of the most striking features of institutional credit in Nigeria in the last decade, for example, has been the significant increase in deposit money banks' direct lending to government for building up infrastructural facilities, program backing and meeting recurrent expenditure. However, during the last decade, the incidence of non-performing loans has increased, which indicates that most of the banks' credit may have gone into the wrong hands. Most of the banks' customers could not pay back large proportions of banks' loans.

This has revealed, to some extent, the insincerity of purpose and inefficient credit management in some of the banks. The Nigerian socioeconomic environment or political economy has not helped matters. Political instability, incessant policy changes, industrial unrest, energy crisis, etc., have all impact on the operators of the Nigerian economy and hence economic growth. One cannot but wonder whether the bank credit irrespective, of wherever channeled, would give rise to the finance stimulates growth effect that would propel the economy forward and bring about economic growth.

The main objective of the proposed research is to examine broadly how deposit-taking banks have impacted on economic growth in Nigeria. More specifically, it will determine the extent to which sectorial allocation of credits by deposit-taking financial institutions affect economic growth and development in Nigeria.

2. Literature Review
Deposit taking banks play an important function in the development and growth of a nation. Principal amongst the roles carried out by deposit money banks is to ensure there is adequate flow of money to service deficit sectors of the economy and facilitate the movement of funds amongst economic units. This movement referred to as financial intermediation is usually from units of surplus to units of deficits/needs. (Ufot, 2004). Supply of finance can retard economic development if it is repressed or stimulate it if it is liberalized.

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Finance stimulates growth thesis was first developed and institutionalized in the studies of Goldsmith (1969), McKinnon (1973) and Shaw (1973) where they established the importance of financial markets in economic development. In their respective works they looked at the stages of economic growth across a sample of countries and concluded that the level of financial services offered by financial intermediaries in these countries were responsible for the level of growth in their economy.

Some early works of econometric research into credit extension by financial institutions and economic growth made use of cross-country regressions using average real GDP as the dependent variable for a particular time, while various measures of financial system development combined with several control variables were used as independent variables. Some of the first empirical research using econometrics to test economic growth can be arranged into different sequence and can be divided into before and after Barro (1991). In carrying out his research he did not test neither did he combine variables of financial intermediation.

His research was followed by King and Levine (1993; 1993) in their respective studies two years later on a further research adopted Barro’s methodology by comparing (i) Gross domestic product to liquid liabilities; (ii) deposit taking institutions domestic assets to central bank domestic assets (iii) loans advanced to private companies divided by loans advanced to central and local government plus loans advanced to public and private companies; (iv) loans advanced to private companies divided by Gross domestic Product. Their sample was drawn from eighty nations and they examined the period range from 1960 to 1989. The major outcome of their research is that financial intermediation is a fundamental determinant of economic growth and development.

With the issue of Endogeneity taken into consideration by King and Levine, Levine (1998) in another subsequent study adopted legal measures as instrumental variables in removing the exogenous part of banking development. He examined a time range from 1976 to 1993 comprising a sample of forty-three nations. The outcome of his study showed that intermediation from loans advanced by commercial banks and other deposit-taking institutions had a significant relationship with economic growth in the long run.

In supporting the theory of financial intermediation and economic growth, Odedokun (1996) used a different approach in his study of this hypothesis by using time regression analysis his work examined 71 countries, using different times from 1960 and 1980 his findings reveals that financial intermediation roughly accounts for eighty-five percent of the growth of the nations. He also found that the level of economic development of each the nations examined was dependent on the level of financial intermediation of the countries and regions examined.

Using a bigger sample size of about one hundred and nine nations Calderon and Liu (2003) analyzed a larger number of nations from 1960 to 1994. In their study using the decomposition test of Geweke came out with the following results: a) the level of financial growth stimulates economic development and growth; b) that there is a relationship between the Granger causality from the level of financial intermediation to economic growth and the Granger causality from economic growth to financial development; c) the level or stage of financial intermediation is a major factor that causes the casual relationship in emerging nations than in developed nations; d) the more the duration of the sampling interval, the more bigger it influences financial development and economic growth; e) that the level of financial intermediation stimulates economic growth when capital accumulation and productivity growth is increased in a faster manner with capital accumulation having a stronger influence on economic growth.

In another related but different research Christopoulos and Tsionas (2004) examined data from ten emerging nations from 1970 to 2000. The outcome of their research showed that there exists casualty with lengthy-duration test from the level of financial intermediation to economic growth without any casualty test from economic growth to the level of financial intermediation not found. Their study did not find any casualty test with short-test duration with the level of financial intermediation and economic growth exist. They however, posited that government regulation when it is geared towards achieving a better financial system will influence growth at slower rate in the short run but will lead to economic growth in the long run.

However, Fink et al. (2005) in his research outcome with respect to time frame discovered a significant relationship with financial intermediation and economic growth in eleven emerging nations from 1990-2001. The study found out that growth was stimulated via the productive sector in these emerging nations. The study further pointed out that growth in financial system development would only influence short run growth in the economy instead of a long-run growth. The study used loan advances from banks; securities market capitalization and balance of debt instruments divided by Gross Domestic Product. In another study of the finance leads growth hypothesis Majid and Musnadi (2010)By employing a battery of time-series techniques, empirically examined the short- and long-run finance-growth nexus during the post-1997 financial turmoil in Malaysia and Indonesia. Based on the AutoregressiveDistributed Lag (ARDL) models, the study documents a long-run equilibrium between economic growth, financedept and inflation.
In another study which sampled Middle Eastern countries by Barakat and Waller (2010) they came out with a result consistent with the hypothesis that a well functioning banking system is vital in enhancing economic growth in an economy. Using findings of the recent World Bank Enterprise Survey to provide some, tentative, further evidence on the relationship between financial development and economic growth, by incorporating the impact of internal finance Ghimire, B and Giorgioni, G (2013) in their study found a positive impact of banks financing on the long-term growth.

That finance does not cause growth is found in the research of De Gregorio and Guidotti (1995) and Demetriades and Hussein (1996) respectively. In researching the impact of finance on economic growth De Gregorio and Guidotti (1995) carried out a study on 98 different nations using lending to private sector as the independent variable from the period 1960 to 1985. Their findings was that not all the growth in the observed countries were stimulated by finance as various factors like time periods, regions and the amount of income were major influences in growth.

They opined that it is the efficiency and not volume of financial investment in the financial intermediation process that influences growth and development. In quite a few countries for example Latin America they found a negative correlation between growth and credit extension by financial intermediaries due to financial liberalization in the early 1970s and 1980s and lack of effective regulation. They therefore concluded that finance stimulates growth cannot be universally applied to all countries.

The most critical opinion on the relevance of financial intermediation stimulating economic growth is formalized in the works of Shan (2005) and Zang and Kim (2007) using time-series, two-panel analysis and cross sectional analysis in their studies of both 11 developed and 12 emerging economies spanning a period of 1985 to 1998 their result evidenced little and negative correlation between financial intermediation and economic growth and development respectively.

The research aims at filling the gap in these literatures reviewed by examining at a more precise and closer country micro economic level one of the major financial intermediaries involve in deposit mobilization widely referred to as commercial banks in Nigeria and their relevance towards enhancing economic growth in an underdeveloped economy like Nigeria.

3. Methodology

Economic Growth in the model is proxied by per capita Gross Domestic Product (LnPGDP), which represents the dependent variable. Financial intermediation by deposit money banks is proxied by credit extension to Production (LnPD), General Commerce (LnGC), Services (LnSV) and Other (LnOT) sectors in the Nigerian economy, which denotes the independent variable in model two. Ln is a natural logarithm.

The sample period that will be examined for the study covers annual data from 1973 to 2011 extracted from the Central Bank of Nigeria (CBN) statistical bulletin and the National Bureau of Statistics (NBS). The methodology provides a support to supply-leading hypothesis (finance development led growth).

Economic growth and Sectorial allocation of credits by deposit money banks

$$\lnPGDP_t = f (\lnPD_t, \lnGC_t, \lnSV_t, \lnOT_t)$$

(1)

Where:

- $f$ = the functional notation
- $C$ = constant
- $\epsilon_t$ = is a zero mean, constant variance, non-autocorelated error term.

If a cointegration relation is found in equation (1) then a short run dynamic error correction model (ECM) can be considered as equation (2).

$$\lnPGDP_t = C + b_1 \lnPD_{t-1} + b_2 \lnGC_{t-1} + b_3 \lnSV_{t-1} + b_4 \lnOT_{t-1} + \epsilon_t$$

(1)

$$\Delta \lnPD_t = C + b_1 \Delta \lnPD_{t-1} + b_2 \Delta \lnGC_{t-1} + b_3 \Delta \lnSV_{t-1} + b_4 \Delta \lnOT_{t-1} - \delta EC_{t-1} + u_t$$

(2)
Where EC is the error correction term that is $e_t$ from estimated co-integration equation (1).

Econometric methods incorporating properties of time-series data (co-integration techniques) will be employed by the researcher in data analysis. Spurious regression associated with less efficient and inconsistent Ordinary Least Squares (OLS) parametric estimates may result if non-stationary variables are not co-integrated (Engle and Granger, 1987).

Thus the data analysis technique will be patterned on the Engle-Granger Representative Theorem (Engle and Granger, 1987). Following Abeyesinghe and Tan (1999) studies, in small samples, OLS estimator may still be the best choice for estimating a co-integrating regression. The Engle-Granger approach proposes an estimation of a co-integrating regression using OLS estimator, and then investigate the presence of a co-integration relation by examining the stationarity of the estimated residual series, series, $e^\text{sub t}^\wedge$.

The variables in equation (1) are said to be co-integrated, if the residual series is stationary, which can be performed by using conventionally used unit root equations like DF, ADF and PP (without constant and time trend) (Engle and Granger, 1987). Haung (2002) found that the Engle and Granger's (1987) ADF test led overall to the highest and most stable powers for typical finite sample sizes.

4. Results

The table 1 below shows the ADF test of stationarity for PGDP, GENS, PROD, SERV and OTHERS. The stationarity test results show that time series data on GDP, GENS, PROD, SERV and OTHERS for Nigeria spanning from 1973 to 2011 are non-stationary. This means all the variables were stationary at first difference, i.e. I(1) series.

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF Test Statistic</th>
<th>Critical Value (5%)</th>
<th>Order of integration</th>
<th>Lag Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGDP</td>
<td>-4.134718</td>
<td>-3.5386</td>
<td>I(1)</td>
<td>1</td>
</tr>
<tr>
<td>GENS</td>
<td>-5.489303</td>
<td>-3.5386</td>
<td>I(1)</td>
<td>1</td>
</tr>
<tr>
<td>OTHERS</td>
<td>-3.616821</td>
<td>-3.5386</td>
<td>I(1)</td>
<td>1</td>
</tr>
<tr>
<td>PROD</td>
<td>-4.832335</td>
<td>-3.5386</td>
<td>I(1)</td>
<td>1</td>
</tr>
<tr>
<td>SERV</td>
<td>-398.4659</td>
<td>-3.5386</td>
<td>I(1)</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Author’s computation using E-Views

The unrestricted cointegration rank test in table 2 shows that there are 5 cointegrating equations at the 5% chosen level of significance. While at 1% 4 equations cointegrated. This tells us that in the long run there is the tendency for the variables to be at equilibrium. Although, the non-stationary nature of the time series data for all five variables only short run forecasts can be made with such results, hence a cointegration test is carried out to ascertain if at the 5 percent level of significance, one or more variables will move together in the long run. The necessary condition to run the error correction mechanism is the existence of at least one co-integrating equation.

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>5 Percent Critical Value</th>
<th>1 Percent Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>None **</td>
<td>0.973010</td>
<td>155.6794</td>
<td>68.52</td>
<td>76.07</td>
</tr>
<tr>
<td>At most 1 **</td>
<td>0.798319</td>
<td>79.82133</td>
<td>47.21</td>
<td>54.46</td>
</tr>
<tr>
<td>At most 2 **</td>
<td>0.670454</td>
<td>46.19890</td>
<td>29.68</td>
<td>35.65</td>
</tr>
<tr>
<td>At most 3 **</td>
<td>0.582892</td>
<td>22.88805</td>
<td>15.41</td>
<td>20.04</td>
</tr>
<tr>
<td>At most 4 *</td>
<td>0.193859</td>
<td>4.525422</td>
<td>3.76</td>
<td>6.65</td>
</tr>
</tbody>
</table>

*(***) denotes rejection of the hypothesis at the 5%(1%) level
Trace test indicates 5 cointegrating equation(s) at the 5% level
Table 3: Parsimonious Error Correction Mechanism

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>321.7558</td>
<td>354.7544</td>
<td>0.906982</td>
<td>0.3994</td>
</tr>
<tr>
<td>T</td>
<td>-0.164156</td>
<td>0.183187</td>
<td>-0.896108</td>
<td>0.4047</td>
</tr>
<tr>
<td>LOG(GDP(-1))</td>
<td>-0.349359</td>
<td>0.390176</td>
<td>-0.895387</td>
<td>0.4051</td>
</tr>
<tr>
<td>LOG(GENS)</td>
<td>-1.696008</td>
<td>1.395167</td>
<td>-1.215631</td>
<td>0.2698</td>
</tr>
<tr>
<td>LOG(OTHERS)</td>
<td>0.877404</td>
<td>0.428722</td>
<td>2.046558</td>
<td>0.0867</td>
</tr>
<tr>
<td>LOG(OTHERS(-2))</td>
<td>-0.626427</td>
<td>0.307351</td>
<td>-2.038147</td>
<td>0.0877</td>
</tr>
<tr>
<td>LOG(PROD)</td>
<td>0.300393</td>
<td>2.473711</td>
<td>0.121434</td>
<td>0.9073</td>
</tr>
<tr>
<td>LOG(PROD(-1))</td>
<td>2.663947</td>
<td>1.908038</td>
<td>1.396171</td>
<td>0.2121</td>
</tr>
<tr>
<td>LOG(SERV)</td>
<td>-0.275539</td>
<td>0.692849</td>
<td>-0.397690</td>
<td>0.7046</td>
</tr>
<tr>
<td>LOG(SERV(-1))</td>
<td>1.003391</td>
<td>0.689223</td>
<td>1.455829</td>
<td>0.1957</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-0.511140</td>
<td>0.000282</td>
<td>-0.494329</td>
<td>0.0386</td>
</tr>
</tbody>
</table>

R-squared: 0.936882  Mean dependent var: 11.84520
Adjusted R-squared: 0.831686  S.D. dependent var: 0.877799
S.E. of regression: 0.360127  Akaike info criterion: 1.047942
Sum squared resid: 0.778148  Schwarz criterion: 1.587080
Log likelihood: 2.092491  F-statistic: 8.906031
Durbin-Watson stat: 2.262071  Prob(F-statistic): 0.007256

The parsimonious error correction results for the hypothesis revealed that GENS and SERV have a negative relationship with PGDP. At lag 1, PGDP is also negative. An inverse relationship exists between PGDP and GENS. A percentage increase in GENS leads to approximately 1.7 decrease in PGDP.

In the same vein, the results for SERV also suggest an inverse relationship with PGDP. A percentage decrease in SERV likely leads to over 25 percent increase in PGDP. On the other hand, PROD and PGDP results suggest a positive relationship. A percentage increase in PROD may lead to over 30 percent increase in PGDP.

The error correction term took the expected sign being negative and is also statistically significant. The speed of adjustment of the variables to attain equilibrium is approximately 51 percent. An adjusted R squared of 83 percent shows that the regression has a good fit. This means that 83 percent of the variation in PGDP can be explained by the variables in the model assuming all things being equal. The overall model is also statistically significant concluding with the value of the F-statistic of 8.91 and the probability of 0.007. The model has no serial correlation since the value of the Durbin-Watson statistic is approximately 2.

5. Conclusions and Recommendations

The study was undertaken to examine the role of financial intermediation by deposit money banks in the economic Growth and Development of Nigeria between the periods 1973 to 2011. The main objective of the research was to ascertain the extent to which sectorial credit allocation by deposit money banks have influenced growth in the economy. The study sought to examine the link between deposit money Banks operations represented by their credit extension to Production, General Commerce, Services and Other major sectors that make up the Nigerian economy and per capita Gross Domestic Product.

The methodology was based on the Ordinary Least Square (OLS) method involving multiple regression analysis. Annual data from the central bank of Nigeria spanning the period (1973-2011) was used to regress per capita Gross Domestic Product as an index of Economic growth on deposit money banks credit to Production, General Commerce, Services and other sectors (PD,GC,SVand OT).
The research asserts the finance stimulates growth thesis. From the analysis of results deposit money banks credit to the Production sector was found to be significant and positive on the growth of the Nigeria economy, while credits to General Commerce, Services and Other sectors were found to have a negative relationship and were of no statistical significance in contributing to economic growth which was proxied by the gross domestic product within the sample period.

The implication that can be drawn from this study is that to ensure that the banking system performs its role of credit allocation effectively it must channel funds into productive investment and more productive uses, deposit money banks should act as efficient financial intermediaries devoted to allocating resources to the most productive uses so as to enhance economic growth. Especially credit allocation to the real sector (production) of the economy, to enhance growth in the Nigerian economy.

References


