Financial Sector Development and Economic Growth in Nigeria: An Econometrics Analysis, 1981-2017

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Abstract
Sequel to the arguments among some scholars that those countries with effectively organized capital markets achieve faster and better economic growth more than other countries with more developed financial institutions, this study was carried out to examine the relationship between financial sector development and economic growth in Nigeria with a view to making relevant contributions to existing knowledge and suggestions that would enhance economic development of Nigeria. Time series data covering the period 1981 - 2017 were gathered from the Central Bank of Nigeria (CBN) Statistical Bulletin & Statement of Accounts and the Federal Bureau of Statistics. Total insurance income (TIY), total deposit money banks assets (DMBASST), total stock market capitalization (TSMC), and broad money supply (M2) as ratio of gross domestic product for each year were used as proxies that measure activities in the financial sector. The gross domestic product (GDP) for each year gave a measure of the performance of the economy or the output for that year. The data analysis was estimated using the ordinary least square regression. The model was subjected to Johansen Rank Cointegration technique to explore the long-run relationship between the variables. Augmented Dickey Fuller and Phillips-Peron tests were conducted to examine stationarity (unit root) to ascertain the order of integration of the variables followed by the error correction model (ECM) using general to specific modeling to obtain meaningful results. The t-tests showed that there is a positive (+ve) and significant relationship between total insurance income and economic growth in Nigeria. Also the model taken as a whole suggested that there is a positive and significant relationship between deposit money banks assets, stock market capitalization and economic growth in Nigeria. The broad money supply though had a significant impact on the economic growth of Nigeria, the effect is negative in the model. The researchers concluded that to achieve a steady economic growth, the financial intermediation should be strengthened through expansion in the capital market, bank consolidation and improvement in the insurance sector. The objectives of regulatory policies of government should be such that would enhance and encourage financial sector development.

Key Words: *Financial Sector, Development, money Market, Capital Market, Economic Growth*

1. Introduction

1.1 Background to the Study

The financial sector is the engine house that drives productive activity of an economy as it performs the vital role of intermediation, provider of payment services and the fulcrum of monetary policy implementation. The financial sector has long been identified as a sector that is instrumental to the development of any economy. Through financial intermediation functions of the financial institutions, surplus spending units and deficit spending units are

linked up. Oluyemi (1995) regards the financial sector of any economy as an engine of growth that could greatly assist in the promotion of rapid economic transformation. He concluded that no economy can ever develop without an appreciable growth in the financial sector. The financial sector as a prime mover of economic development, mobilizes savings from surplus to deficit economic units. This has helped in the productivity of any economy. The efficiency and effectiveness of the intermediation of any financial institution is a function of the level of the financial systems development.

Economic growth is a gradual and steady change in the state of the economy in the long-run which comes about by a general increase in the rate of savings and population (Jhingan, 2005). It can be characterized as an upward change in the level of production of goods and services by a country over a certain period of time. It is usually brought about by advancement in innovative technology and relationship with external forces. An economy is said to be growing when it increases its productive capacity which later yield more in production of more goods and services (Jhingan, 2003). It is a measure for the improvement of standard of living of the people. An international monetary fund report in 2009 has it that Nigeria's money and capital markets still lack the depth to lift the economy out of the doldrums.

The financial markets have been underdeveloped overtime and the underdevelopment in the financial markets has further dampened the level of economic growth in Nigeria. Even though the Nigerian financial system had experienced some progress in the past years, it has encountered some series of challenges. The issue of macroeconomic instability has continued to pose a hindrance to the development of the financial sector in Nigeria. Frequent policy reversals have resulted to disinvestment in the financial and real sectors which have impacted negatively on macroeconomic performance (Oriavwote & Eshenake, 2014). On this note, this study therefore seeks to critically examine the transformation and development of financial sector and its effects on the economic growth of Nigeria.

1.2 Statement of the Problem

It has been observed that what accounted for lack of funds in the Nigerian financial sector is traceable to the underdevelopment of the real sector. Most business operators in the productive sector are folding up due to their inability to acquire loans from the financial institutions or because the interest rate was outrageous. The Nigerian banks have concentrated on short term lending as against the long term investment which should have formed the strength of a transformed economy, this ought not to be so because over the long run, there has been in most countries a rough but unmistakable parallel between economic growth and financial development.

Nnanna, Englama and Odoko, (2004), maintained that lack of adequate coordination and harmonization of fiscal and monetary policies have even dampened the performance of the Nigerian financial sector. They posit that the high cost of assessing funds has also discouraged investors from patronizing the banking system. Observably, the development of the financial sector in Nigeria has also been hindered by poor state of the utilization of infrastructures in the financial sector. Such infrastructures challenges include power supply, problem of telecommunication, which include difficulty in internet access etc. which have increased the cost of operation (Nnanna, Englama & Odoko, 2004).

Past studies, e.g. Mckinnon (1973) and Shaw (1973) argued that policies that lead to financial

repression reduce the incentives to save. They suggest that a negative real rate of interest discourages savings and hence reduces the availability of loanable funds, hinders investment, and in turn reduces the rate of economic growth. They posited that a hike in the real rate of interest may induce the savers to save more which will enable investment to take place. Given the importance of the financial system to an economy this study seeks to investigate the nexus between financial sector development and economic growth in Nigeria.

1.3 Objectives of the Study

The broad objective of this research is to empirically investigate the relationship that exists between financial sector development and economic growth in Nigeria. The specific objectives are:-

1. To examine the relationship between financial intermediation and economic growth in Nigeria.
2. To examine the relationship between the growth of the capital market and economic growth in Nigeria.
3. To examine the relationship between activities in the insurance sub-sector and economic growth.
4. To examine the relationship between development in financial institution (Deposit money banks assets) and economic growth.

1.4 Statement of Hypotheses

Ho_1: Deposit money banks' asset has no effect on economic growth.
Ho_2: Capital market development has not impacted positively on economic growth.
Ho_3: The growth of the insurance sub-sector has not impacted positively on economic growth.
Ho_4: The level of financial intermediation has not impacted positively on economic growth.

1.5 Significance of the Study

The outcome of this study will benefit the operators of financial institutions, government, businessmen, and individuals. This study will be most significant to the banking sector; the need for consistent, transparent and fair policy to all the players in the sector will be reveal.
The study is also significant to the government. It will help the government on her drive for fiscal adjustment as well as the development of more flexible financing option. Besides, the study will remain a good reference document for all students and researchers carrying out research on the same or similar topic.

2. Literature Review

2.1 Theoretical Literature

Stiglizt (1985) in a model of multiple principals and multiple agents-stresses that banks and labour union provide better method of resource allocation and corporate governance than stock markets. According to Stiglizt (1985), this is even more common in the developing countries, where banks enjoy economies of scale in lending investible funds as a result of the fact that banks can gather information for optimal resource allocation. On the other hand, stock markets often create a free rider problem because investors usually make transactory decisions by merely observing price, which decreases investors' cost of conduct costly search (Stiglizt, 1985). He further maintains that banks have institutional arrangements that provide mechanisms that help to reduce the free rider problem. However, it is pertinent to state that the issues of moral hazard and adverse selection will surely limit the workability of this

suggestion as it has been revealed that banks also suffer thereon. Boyd, Chang & Smith (1998) note that moral hazard is even made worst in the presence of universal banking, where banks are allowed to take equity positions in companies they serve.

Providing another support for the banking sector as against the development of stock market, Singh (1997) opines that stock market development leads to short-termism and lower rate of economic development. Accordingly, a reformation of the banking sectors would not only consume fewer resources directly, but it would also be an easier option in terms of institutional capacity for the concerned developing countries, compared with the infrastructure required for the effective functioning of stock markets. With these arguments, Singh (1997) concludes that developing countries would do better by reforming the institutional structures of their banking systems rather than create stock markets that require sophisticated monitoring systems to enable them to function effectively.

In a subsequent study, which also agrees with previous thoughts but from a different framework, Allen and Gale (2000) argue that bank-based systems often offer better inter temporal risk sharing services than markets with beneficial effects on resource allocation. According to Allen and Gale (2000), this is in addition to the fact that myopic investors change the climate in the market. Hence, investors can dispose of their shares at high rates, so that they have fewer incentives to undertake careful corporate governance.

2.1.1 Financial Liberalization and Economic Growth

Financial liberalization is the removal or loosening of restrictions imposed by the government on the domestic financial market. This view seems to be narrow in explaining the concept of financial liberalization. Kaminsky and Schmukler (2003) provide a broader concept. They opined that financial liberalization consists of the deregulation of the foreign sector capital account, domestic financial sector, and the stock market sector viewed separately from the domestic financial sector. From this definition, they put forward that full financial liberalization occurs when at least two of the three sectors are fully liberalized and the third one is partially liberalized.

Financial liberalization can lead to financial deepening and higher growth in several countries. It is a panacea to the development of the financial system in a finically depressed economy. Under the financial repression regime, the monetary authorities impose high reserve requirements, bank-specific credit ceilings and selective credit allocation, mandatory holding of treasury bills and bonds issued by the government, and finally a non-competitive and segmented financial system. Achy (2003), Shaw (1973) and Mckinnon (1973) claimed that financial liberalization policies would increase savings which would consequently spurs investment and induce economic growth. They argued that higher interest rates brought about by liberalization leads to a more efficient allocation of resources, higher level of investment and economic growth. Bhaduri (2005) argued that the focus of liberalization is to replace the unpopular “command and control” system with a relatively liberalized regime where prices reflects economic costs, along with a greater reliance on the private sector as the engine of growth.

Johnston and Sundararajan (1999) considered financial liberalization as a set of operational reforms and policy measures designed to deregulate and transform the financial system and its structure with the view to achieving a liberalized market-oriented system within an appropriate regulatory framework.

2.1.2 Financial Intermediation and Economic Growth

Financial intermediaries are banks that mobilize savings for investment purposes. They act as intermediaries between, ultimate save-lenders and ultimate borrower-spenders. Financial intermediation is an important activity in the Nigerian economy because it allows funds to be channeled from people who might otherwise not put them to productive use to people who will. In this way financial intermediation helps promote a more efficient and dynamic economy (Gershenkron, 1962).

2.1.3 Financial Deepening and Economic Growth

Financial deepening implies the ability of financial institutions to effectively mobilize savings for investment purposes. The growth of domestic savings provides the real structure for the creation of diversified financial claims. It also presupposes active operations of financial institutions in the financial markets, which in turn entail the supply of quality (financial) instruments and financial services (Ndekwu, 1998). The views above conform to the conclusions of a study by Nnanna and Dogo (1998). Their findings in this study is that policies of financial repression aimed at encouraging domestic investments through suppressing interest rates produced negative results. Here, negative real interest rates did not encourage greater investments but rather encouraged the banks to be more risk averse and more hesitant to lend. On the other hand, when interest rates are more market oriented and less negative in real terms, bank lending increases and same to domestic investments and national savings.

Financial deepening generally entails an increased ratio of money supply to Gross Domestic product (Popiel, 1990; Nnanna & Dogo, 1998; Nzotta, 2004). Financial deepening is thus measured by relating monetary and financial aggregates such as M1, M2 and M3 to the Gross Domestic Product (GDP). The point is that the more liquid money is available to an economy, the more opportunities exist for continued growth of the economy. Deep and mature financial markets are indispensable for economic development (Olofin & Afangideh, 2008; Wolde-Rufael, 2009; Levine, 1997).

2.2 Empirical Literature

Goldsmith (1969) using data from 35 countries over the period 1860-1963 considered the relationship between economic growth and aggregate measures of how well the financial system functions. He used the value of financial intermediary assets divided by GNP to gauge financial development under the assumption that the size of the financial system is positively correlated with the provision and quality of financial services. Goldsmith's findings are;- A rough parallelism can be observed between economic and financial development if periods of several decades are considered; There are indicators in the few countries for which the data are available that periods of more rapid economic growth have been accompanied though not without exception by an above average rate of financial development.

Levine and Zervos (1998) studied the empirical relationship between measures of stock market liquidity, size, volatility and integration with world capital markets on the one hand, and economic growth, saving rates, improvements in productivity and capital accumulation, on the other hand, for 47 developing and developed countries in the sample period 1976-1993. Their analysis suggests an important empirical relationship between stock markets and economic growth. They conclude that in the countries considered, stock market liquidity and bank development were positively and significantly correlated with economic growth, capital accumulation and productivity increases. Stock market size, volatility and integration with

world capital markets, however, were not significantly correlated with economic growth and productivity increases.

Demirguç-Kunt and Levine (1996) studied the relationship between financial structure and economic growth. Their focus is on the degree the financial system is market or banking oriented and what the relation is to economic growth. Two methodologies of these authors are interesting and worth to review here. The first is their cross-country approach that determines if economies grow faster in market or banking oriented systems. They found no clues that either market or banking oriented systems have more or less influence on economic growth. What comes forward is that the level of financial development and the surroundings in which financial intermediaries and markets operate; induce economic growth. The second methodology is a branch of industry approach to whether different branches, which heavily depend on external finance, grow faster in market or bank based financial systems. They concluded that economies that heavily depend on external finance grow faster.

CetoreIIi and Gambera (2001) explore the empirical relevance of banking market structure on growth. They use an extension of the Rajan and Zingales data set, with both cross-industry and cross-country characteristics. Three models were employed to help in their analysis. They tested whether sectors that are more in need of external finance grow disproportionately slower or faster if they are in a country with high bank concentration. Ratio analysis and various test of robustness were used in their empirical analysis. It was discovered from their study that an efficient bank market structure enhances economic growth.
Hermes and Lensink (2003) established a relationship between financial development, foreign direct investment (FDI) and economic growth. An empirical investigation was carried out on the role financial development plays in enhancing the positive relationship between FDI and economic growth. Of the 67 countries in the data set, 37 have a sufficiently developed financial system in order to let FDI contribute positively to economic growth. Most of these countries are in Latin America and Asia. Most all the other counties in the data set are in Sub-Saharan Africa. These countries have very weak financial systems and consequently FDI does not contribute positively to economic growth.

Hao et al, (2004) using Chinese provincial data from 1985 to 1999 examines how the development of financial intermediation influences China's economic growth during the post-1978 reform period. His results show that China's financial intermediation development contributes to its rapid economic growth through two channels: first, the institution of loans for state budget appropriation and second, the mobilization of household savings. Loan expansion, however, does not contribute to growth since loan distribution by financial intermediaries is inefficient.

3. Method of Study

3.1 Research Design

Nachmias and Nachmias (1976) cited in Baridam (2001) sees research design as a framework or plan that is used as a guide in collecting and analyzing data for a study. In this regard, the framework that was adopted in this study is a quasi-experimental design. This design is adopted because the study seeks to explore the effect of the proxies for financial sector development on economic growth. Nwankwo (2013) has it that the quasi-experimental design allows for the evaluation of the effect of independent variable(s) on a dependent variable. This study covered a 37 year period ranging 1981-2017. Data for the variables were obtained from the annual statistical bulletin of the Central Bank of Nigeria and its statement of

accounts and were analyzed using the ordinary least square regression framework and the long run relationship of these variables were explored using Johansen cointegration technique after which an error correction model was used to estimate the model using general-to-specific modeling procedure.

3.2 Model Presentation

The model adopted in this study follows the findings of Schumpter (1912), Mckinnon (1973) Fry (1995) and King and Livine (1993) that financial development spurs economic growth. The functional relationship is expressed as:

$$L\,(GDP) = f\left(\frac{DMBASST}{GDP}, \frac{TSMC}{GDP}, \frac{M2}{GDP}, \frac{TIY}{GDP}\right). \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

The mathematical (exact) form of equation (1) above is expressed as

$$L(GDP) = \alpha_0 + \alpha_1\left(\frac{DMBASST}{GDP}\right) + \alpha_2\left(\frac{TSMC}{GDP}\right) + \alpha_3\left(\frac{M2}{GDP}\right) + \alpha_4\left(\frac{TIY}{GDP}\right) \quad \ldots\ldots\ldots\ldots(2)$$

Economic relationships are inexact, therefore recasting equation (2) in an econometric model we have

$$L(GDP)_T = \alpha_0 + \alpha_1\left(\frac{DMBASST}{GDP}\right)_T + \alpha_2\left(\frac{TSMC}{GDP}\right)_T + \alpha_3\left(\frac{M2}{GDP}\right)_T + \alpha_4\left(\frac{TIY}{GDP}\right)_T + \mu_T$$

Where:

$L\,(GDP)_t$ = represent logarithm of Gross Domestic Product at time 't'

$\left(\frac{DMBASST}{GDP}\right)_t$ = represent ratio of Deposit money Banks' asset to gross domestic product at time't'.

$\left(\frac{TSMC}{GDP}\right)_t$ = represent ratio of total stock market capitalization to Gross Domestic Product at time't'

$\left(\frac{M2}{GDP}\right)_t$ = represent ratio of Broad Money supply to Gross domestic product at time't'

$\left(\frac{TIY}{GDP}\right)_t$ = represent ratio of total insurance income to Gross domestic product at time't'.

μ_t = represent the error term at time't'

The behavioural assumptions are a_1, a_2, a_3 and $a_4 > 0$

3.3 Description of Variables and Data Source

- Ratio of deposit money banks' asset to gross domestic product $\left(\frac{DMBASST}{GDP}\right)$: This is used to measure the level of growth in financial institution (money market), it is derived by dividing the asset of deposit money banks by Gross Domestic Product.
- Ratio of total stock market capitalization to gross domestic product $\left(\frac{TSMC}{GDP}\right)$: This is used as a proxy for capital market development. It is derived by dividing the total stock market capitalization by gross domestic product.
- Ratio of broad money supply to gross domestic product $\left(\frac{M2}{GDP}\right)$: This is used as a

proxy for the level of financial intermediation. It is derived by dividing broad money supply by gross domestic product.

- Ratio of total insurance income to gross domestic product $\left(\frac{TIY}{GDP}\right)$: This is used as a proxy for growth in insurance subsector. It is derived by dividing the total (life, non-life and others) income by gross domestic product.
- Logarithm of gross domestic product L (GDP): This is used as a proxy for economic growth. It is the logarithm of the market value of goods and services produced within the geographical confines of Nigeria. Data for these variables were sourced from the central bank's statistical bulletin and annual reports and statements of accounts (various issues).

3.4 Data Analysis and Estimation Technique

The study adopted descriptive statistics and quantitative analysis. The quantitative analysis relied on econometric technique in estimating the model. Econometrics concerns itself with the estimation and testing of economic relationship as well as assessing the performance of the estimated relationship. Onuchuku and Adoghor (1999) sees econometrics as a science that deal with the measurement of economic relationships by integrating economics, mathematics and statistics for the purpose of providing numerical values to parameters of economic relationships and verifying economic theories.

Consequent upon the above, the study adopts the ordinary least square regression analysis framework. This method was adopted because its estimates satisfy the statistical BLUE properties. That is, Best Linear Unbiased Estimates. Stationarity (unit root) test was performed to ascertain the order of integration of the variables so as to understand the best way possible in modeling the variables to obtain meaningful and scientifically valid results. The test for unit root relied on the widely used Argumented Dickey-Fuller and Phillips-Perron tests. Also, cointegration test was performed to determine if the variables have long run relationship. In this regard, the Johansen rank based cointegration test was used.

4. Data Presentation, Analysis and Discussion of Findings

4.1 Data Presentation

YEAR	M2 (₦m)	GDP(₦m)	TSMC(₦m)	TIY (₦m)	DMBASST (₦m)
1981	14,471.17	94,325.02	5,000.0	0.2	19477.5
1982	15,786.74	101,011.23	5,000.0	0.3	22661.9
1983	17,687.93	110,064.03	5,700.0	0.2	26701.5
1984	20,105.94	116.272.18	5,500.0	0.2	30066.7
1985	22,299.24	134,585.59	6,600.0	0.2	31997.9
1986	23,806.40	134,585.32	6,800.0	0.3	39678.8
1987	27,573.58	193.126.20	8,200.0	0.4	49828.4
1988	38,356.80	263,294.46	10,000.0	0.5	58027.2
1989	45,902.88	283,261.49	12,800.0	0.7	64874
1990	52,857.03	472,648.75	16,300.0	1,048.4	82957.2
1991	75,401.18	545,672.41	23.100.0	1,334.2	117511.9
1992	111,112.31	875,342.52	31,200.0	2,517.9	159190.8
1993	165,338.75	1,089,679.72	47,500.0	5,901.3	226162.8
1994	230,292.60	1,399,703.22	66,300.0	14,671.7	295033.2
1995	289,091.07	2,907,358.18	180,400.0	14,587.6	385141.8
1996	345,853.96	4,032,300.34	285,800.0	13,150.6	458777.5
1997	413,280.13	4,189,249.77	281,900.0	16,519.0	584375
1998	488,145.79	3,989,450.28	262,600.0	17,846.5	694615.1
1999	628,952.16	4,679,212.05	300,000.0	14,643.9	1070020
2000	878,457.27	6,713,574.84	472,300.0	22,531.5	1568839
2001	1,269,321.61	6,895,198.33	662,500.0	28,981.3	2247040
2002	1,505,963.50	7,795,758.35	764,900.0	37,765.9	2766880
2003	1,952,921.19	9,913,518.19	1,359,300.0	43,944.7	3047856
2004	2,131,818.98	11,411,066.91	2,112,500.0	50,495.9	3753278
2005	2,637,912.73	14,610,881.45	2,900,100.0	67,746.3	4515118
2006	3,797,908.98	18,564,594.73	5,120,900.0	82,361.9	7172932
2007	5,127,400.70	20,657,317.67	13,181,700.0	105,379.3	10981694
2008	8,008,203.95	24,296,329.29	9,563,000.0	157,206.0	15919560
2009	9,411,112.25	24,794,238.66	7,030,800.0	189960.5	17522858
2010	11,034,940.93	33,984,754.13	9,918,200.0	200,376.0	17331559
2011	12,172,490.28	37,409,860.61	9,672,700.0	233,752.9	18767438
2012	13,895,389.13	40,544,099.94	14,800,900.0		20477372
2013	13,033,939.69	38,976,980.28	12,236,800.0	217,064.45	19622405
2014	13,464,664.41	39,760,540.11	13,518,850.0	225,408.68	20049888.5
2015	13,249,302.05	39,368,760.20	12,877,825.0	221,236.57	19836146.8
2016	13,356,983.23	39,564,650.16	13,198,337.5	223,322.63	19943017.7
2017	13,303,142.64	39,466,705.18	13,038,081.25	222,297.60	19889582.3

Source: Central bank of Nigeria Statistical Bulletin and annual Statement of Account and Reports (various Issues)

4.2 Data Analysis and Discussion of Finding

We estimate the static regression of our model in the ordinary least square framework. The result is presented below on table 4.2.

Table 4.2 Static Regression Result

Dependent variable log (GDP)

Variable	Co-efficient	Std.error	t-value	Probability
C	12.56170	0.613761	20.46678	0.0000
(TIY/GDP)	470.9778	87.12107	5.406015	0.0000
(DMB/GDP)	6.229720	7.037695	0.885193	0.3842
TSMC/GDP)	4.643417	2.880906	1.611790	0.1191
(M^2/GDP)	-11.48763	12.25363	-0.937488	0.3571
R^2 = 0.750, Adj.R^2 = 0.712, DW – 0.876 F-statistic = 19.52, Prob (F-statistic) – 0.0000				

Source: Author's computation, 2018

From the table above, the ratio of total insurance income to Gross domestic product (TIY/GDP) conformed to theoretical expectation that is, it appeared with a positive sign and significant given its t-value of 5.41 and its probability value of 0.0000 which is less than 5% (0.05). This is an indication that activities in the insurance subsector stimulate growth in the Nigerian economy.

The ratio of deposit money banks' asset to Gross domestic product (DMBASST/GDP) appeared with a positive sign but not significant given its t-value of 0.88 and its associated probability of 0.38 which is greater than 5% (0.05) level. This implies that the growth of money market institution viz-a-viz deposit money banks has not contributed significantly to the growth of the Nigerian economy.

The ratio of total stock market capitalization to gross domestic product conformed to a priori expectation with a coefficient of 4.64 indicating that a unit increase of the ratio (TSMC/GDP) has the potential of increasing economic growth by 4.64% but the coefficient is not significant given its t-value of 1.61 and the probability value of 0.12 which is greater than 5% (0.05) level. Thus, Nigeria's capital market has not significantly encouraged economic growth.

The ratio of broad money supply to gross domestic product (M2/GDP), appeared with a negative sign and also, is not significant given its t-value of 0.94 with the probability of 0.36 which is greater than 5% (0.05) level. This suggests that the level of financial intermediation has impacted negatively on the Nigerian economy.

Also from table 4.2, the adjusted R2 indicates that the model has an explanatory power of 71%. That is, 71% of the variation in the dependent variable (economic growth) is jointly explained by the proxies for financial sector (TIY/GDP), (DMBASST/GDP), (TMS/GDP) and (M_2/GDP). The remaining 29% is explained by variables not included in the model. The F-statistic and its reported probability value indicates the overall significance of the model at 1% and Durbin-Watson (DW) value of 0.876 which is far below 2 is suggestive of the presence of serial correlation in the model and as such the adoption of this model for policy formulation and implementation may be misleading thereby necessitating the test for unit root, cointegration and the Error Correction Model (ECM).

4.2.2 Unit Root Test

We test to examine the order of integration of the variables using both Argumented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests.

The results are presented below:

Table 4.3: (ADF) and (PP) stationarity test result

ADF test				**Pp test**		
Variable	**Level**	**1st difference**	**Remark**	**Level**	**1st difference**	**Remark**
Log (GDP)	-063	-4.47*	I(1)	-0.61	-4.47*	I(1)
(DMBASST/GDP)	-0.80	-4.27*	I(1)	-0.95	-4.13*	I(1)
(TSMC/GDP)	-1.35	-6.15*	I(1)	-1.29	-7.21*	I(1)
TIY/GDP)	-1.80	-5.46*	I(1)	-1.68	-8.93*	I(1)
M2/GDP)	-0.02	-4.42*	I(1)	-0.09	-4.31*	I(1)

* Indicates significance at 1% level
Source: Author's computation, 2018

Table 4.3 above shows that all the variables; log of gross domestic product, ratio of deposit money banks' asset to gross domestic product, ratio of total stock market capitalization to gross domestic product, ratio of total insurance income to gross domestic product and ratio of broad money supply to gross domestic product were non-stationary at level but became stationary after first differencing; thus all variables are integrated of order I(1). Having established the order of integration we proceed to test for cointegration in order to ascertain long-run relationship amongst the variables.

4.2.3 Cointegration Test

Following Johansen (1988), Johansen and Juselius (1990) reduced rank approach, table 4.4 shows that there exists a long-run relationship between the variables. Both the trace and Max-Eigen value statistic show that the null hypothesis of "none" cointegrating equation at 5% significance level is rejected but the hypothesis of "at most 1" could not be rejected. Thus, there is one cointegrating equation.

Table 4.4 Johansen Cointegration test Result

Hypothesized No. of (E/s)	Eigen Value	Trace Statistics	0.05 Critical value	Prob	Max Eigen statistic	0.05 critical value	Prob
None *	0.846723	99.36322	69,81809	0.0000	54.38973	33.87687	0.0001
At most 1	0.591144	44.97349	47.85613	0.0910	25.93735	27.58434	0.0800
At most 2	0.379021	19.03611	29,79707	0.4903	13.81727	21.13162	0.3802
At most 3	0.158727	5.218842	15.49471	0.7852	5.012346	14.26460	0.7403
At most 4	0.007095	0.206495	3.841466	0.6495	0.206495	3.841466	0.6495

* Denotes rejection of the hypothesis at the 0.05 level
Source: Author's computation, 2018

Having established that there is a long run relationship between the variables, we proceed by estimating the error correction model (ECM).

4.2.4 Error Correction Model (ECM)

The ECM is estimated using the general to specific approach; we start by estimating an over-parameterized ECM from which a parsimonious ECM was obtained by deleting the

insignificant coefficients.
The result of the parsimonious error correction model is presented in table 4.5 below:

Table 4.5 Parsimonious Error Correction Model
Dependent variable; D (Log(GDP)

Variable	Coefficient	Stat-error	t- statistic	Prob.
C	0.18035	0.034218	8.449528	0.0025
D(log(GDP(-1)	0.432846	0.139904	3.593883	0.0057
D(TSMC/GDP(-2)	0.319149	0.254946	1.251828	02251
D(DMBASST/GDP(-1)	0.792998	0.372163	2.130783	0.0457
D(M2/GDP)	-4884136	0.792556	6.162514	0.0000
D(TIY/DGP(-1)	33.35286	12.84832	2.595892	0.0173
D(TIY/GDP(-2)	23.41343	11.12091	2.165352	0.0481
ECT(-1)	-0.015878	0.022733	0.698445	0.4929
R^2=0.83 Adj R^2 =0.75 F – Statistic = 12.06 F-statistic = 12.06 DW = 1.88 Prob (F-statistic = 0000 Prob (f-statistic =0. 000)				
LM test stat. 1.35 Prob. F2-18) = 0.2842		White's heterrscedasticit test F-statistic = 0.565869 (Prob.F(8.20)=0.7932		

Source: Author's computation, 2018

From table 4.5, a period lag of dependent variable log (GDP(-1)) appeared with a positive sign and insignificant at 5% level. This shows that an increase in the growth of GDP in period (t-1) by 1 % stimulates economic growth in period (t) by 0.43%.
A period lag of the ratio of total stock market capitalization to gross domestic product is rightly signed and significant at 5%, level. This coefficient indicates that increase in the ratio by a unit stimulates economic growth by 0.69%. Also, a period lag of the ratio of deposit money banks' asset to gross domestic product appeared with the right sign and is significant at 5% level. This shows that increased ratio of deposit money banks asset to gross domestic product in period (t-1) stimulates economic growth in the current period (t).

The ratio of Broad money supply to gross domestic product has a negative impact on economic growth given its coefficient that appeared negative and significant at 5% level. One and two period, lags of ratio of total insurance income to gross domestic product are significant at 5% level. This implies that increased ratio of total insurance income to gross domestic product in period (t-1) and (t-2) stimulates economic growth in period (t).
The coefficient of the error correction term appeared with its expected negative sign. About 2% of any disequilibrium in the model is corrected annually. In other words, it shows about 2% speed of convergence to equilibrium once shocked. The adjusted R2 of 0.76% indicates that the model has an explanatory power of 76%. Specifically, 76% of the variation in the dependent variable (economic growth) is explained by the explanatory variables (proxies for financial sector development) in the model while the remaining 24% is captured by variables equally important but not included in the model. The F- statistic of 12.06 and its reported probability value indicates the significance of the model in its entirety at 1% level.

The Breusch-Godfrey LM test Statistic of 1.35 (order 2) and its reported probability of 0.2842 indicates that the null hypothesis of no serial correlation could not he rejected at 5% level. Also, White's heteroscedasticity test of 0.565869 and its reported probability value

(estimated with no cross-products) indicates that the null hypothesis of no heteroscedasticity in the model could not be rejected at 5% level. The LM test statistic and White's heteroscedasticity test statistic strongly suggests that the residuals from the dynamic model is white noise.

5. Summary, Conclusion and Recommendations

5.1 Summary

The study explored the recent development in financial sector and its effect on economic growth in Nigeria for the period 1981 through 2017 within the framework of co-integration and error correction modeling techniques.

The time series data on this study were extracted from the Central Bank of Nigeria Statistical Bulletins and Central Bank Annual Report and Statements (various issues). Specifically, data on broad money supply, deposit money banks' asset, total stock market capitalization, total insurance income and gross domestic product were used to proxy financial sector development and economic growth respectively.

The need for the use of co-integration and error correction modeling for the analysis of the study was due to total instability caused by instability in Nigeria's economic terrain, with frequent policy changes, political – economic disruptions etc. therefore, there is need for data differencing when the time series data is non-stationary for meaningful economic results. From the empirical result, it is evident that the behaviour of the explanatory variables used are consistent in sign except the ratio of broad money supply to gross domestic product and they are all significant when taken together, suggesting that the explanatory variables exert significant influence on economic growth.

Specifically, increased deposit money banks' activities, Insurance sub-sector activities and capital market activities measured as the ratio of deposit money banks' asset, total Insurance Income and Total Stock market Capitalization to gross domestic product respectively have impacted positively on the Nigerian economy. While the ratio of broad money supply to gross domestic product has a negative impact on the Nigerian economy.

5.2 Conclusion

From this research work, the place of financial sector as an engine of growth was fully established. In line with the information gathered from the review of relevant literatures, analysis of data and results, we conclude as stated below:

- That effort should be geared towards the development of the financial sector so as to further strengthen its contribution to the growth of the Nigerian economy.
- The Nigerian Stock Exchange (NSE) and Nigerian Exchange Commission (NEC) should strive to promote the activities of capital market performance because the market has consistently shown significant and positive impact during the period covered in this study.
- The National Insurance Commission should ensure that operators adhere to laid down rules and regulations guiding insurance business in the country and enlightenment campaigns should be carried our rigorously so as to sensitize Nigerians especially those in rural areas of the benefits accruable to being insured.
- As a matter of urgency, the Central Bank of Nigeria should strengthen and improve its banks supervisory roles so as to meet up with the fast evolving banking businesses in the country. This is necessary for proper monitoring and evaluation of the performance of deposit money banks.

5.3 Recommendations

Some policy implications can be gleaned from our findings. In view of these findings the following suggestion has been made.

(i) Strong asset base of the banking sector should be continually pursued as an economic objective. This will help in building depositors' confidence and eliminate distress thus encouraging savings mobilization and credit creation for a sustainable economic growth in Nigeria. Reforms such as recapitalization and reconsolidation should be pursued from time to time by the Central Bank as this will continually make the financial system viable in supporting rapid economic growth in Nigeria.

(ii) The Nigerian Stock Market should be expanded so as to increase its depth, breath and sophistication of market products and offerings, encourage efficiency and cost competitiveness and a strong regulatory oversight is needed to continually support effective resource mobilization in the economy.

(iii) There is need for public campaigns, enlightenment, awareness creation and education on benefits derivable from insurance by practitioners and regulators so as to alter positively the perception of the general public on insurance generally. Also, introduction of new products and services are needed so as to keep abreast with recent trends of insurance products of the West. This no doubt will further strengthen the Nigerian economy.

(iv) To further strengthen and encourage growth in the Nigerian economy, there is need to ensure macroeconomic and political stability.

(v) The government should provide adequate security as protection of lives and property (property rights) is critical in encouraging investors to invest in or capital and money market.

References

Abu- Bader, S., & Abu-Qarn, A. (2008). Financial development and economic growth: The Egyptian experience. *Journal of Policy Modelling, 30*(5), 887-898.

Achy, L. (2003). Financial liberalization, saving, investment and growth in MENA countries. *Forthcoming in Middle-East Economics, Vol. 6*

Allen, F., & Gale, D. (2000). *Comparing financial systems.* Cambridge, MA. MIT Press.

Baridam, D.M. (2001). *Research methods in administrative sciences*. Port Harcourt: Sherbrooke Associates.

Bhaduri, S.N. (2005). Investment, financial constraints and financial liberalization: Some stylized facts from a developing economy, India. *Journal of Asian Economics, 16*, 704-718

Boyd, J. H., Chang, C., & Smith, B. D. (1998). Moral hazard under commercial and university banking. *Journal of money, Credit, and Banking, 30*, 426-468.

CBN, Statistical Bulletin, Golden Jubilee Edition, (2017), http://www.cenbank.org/OUT/ PUBLICATIONS/STATBULLETIN/STD/2018/STABULL%20-%20VOL.SEEN. PDF

Cetorelli, n. and Gambera, M. (2001). Banking market structure, financial dependence and Growth: International evidence from industry *Data*. *Journal of Finance*, *56*, 2, 617-648.

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

Fry, M. J. (1995). Money, interest and banking in economic development Ballimore: John Jopkins University Press.

Gerschenkran, A. (1962). *Economic backwardness in historical perspective.* A book of

essays. *Cambridge*: Harvard University Press.

Goldsmith, R. W. (1969). *Financial structure and development*. New Haven, C. T: Yale University Press.

Hao, Zhou, Bollerslev, T., & Gibson, M. (2004). *Dynamic estimation of volatility risk premia and investor risk aversion from option-implied and realized volatilities*: Financial and economics discussion series, division of research and statistics and monetary affairs; Federal Reserve Board, Washington D. C.

Hermes, N., & Lensiuk, R. (2003). Foreign direct investment, financial development and economic growth: *Journal of Development Studies, 38,* 58-65.

Jhingan, M. L. (2003). The economics of development and planning (36th Ed). Delhi, global perspective initiative working paper 32 (Mercatus Center).

Jhingan, M. L. (2005). The economics of development and planning (36th edition). Delhi, Vrinda Publications (p) Ltd.

Johansen, S. (1988). Statistical analysis of cointegration vectors. *Journal of Economic Dynamics and Control, 12*, 231-254.

Johnston, R.B., & Sandararajan, V. (1999). Sequencing financial sector reforms, country experiences and issues. International Monetary Fund, Washington D.C.

Kaminsky, G.L., & Schmukler, S.L. (2003). *Short-run pain, long-run gain: The effects of financial liberalization*. IMF Working Paper WP/03/34, Washington D.C

King, R. G., & Levine, R. (1993). *Finance and growth:* Schumpeter might be right. *Quarterly Journal of Economics, 108* (3), 713-737.

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

Levine, R. (1997). Financial development and economic growth: Views and Agenda. *Journal of Economic Literature, 35,* 688-726.

Mckinnon, R.I. (1973). *Money, capital and banking in economic development*, Brooklyn Institution, Washington D.C.

Nachmias, C., & Nachmias, D. (1976). *Research methods in the social sciences*, Edward Arnold, London.

Ndekwu, E.G. (1998). The financial systems role in resource mobilization and investment: an analysis of financial deepening in Nigeria's financial sector.

Nnanna, O. J., & Dogo, Mela (1998). Structural reform, monetary policy and financial deepening: The Nigerian experience. *Economic and Financial Review, 36* (2),1-29.

Nnanna, O. J., Englama, A., & Odoko, E. O. (2004). *Finance, investment and growth in Nigeria*. Central Bank of Nigeria, Corporate Headquarters, Abuja, FCT.

Nwankwo, L. I. (2013). Determination of natural radioactivity in groundwater in Tanke-Illorin Nigeria. *West Africa Journal of Applied Iconological Laboratory*. Available at http://www.ug.edu.gh/iess/wajae/WAJAEBDESIGN.

Nzotta, S. M. (2004). Money, banking and finance, theory and practice. Owerri: Hudson Jude Publishers.

Olofin, S., & Afangideh, U. J. (2008). Financial structure and economic growth in Nigeria, *Nigerian Journal of Securities and Finance,* 13 (1), 47-68.

Oluyemi, O. V. (1995). Impact of bank and non-bank financial institutions on the growth and development of the Nigerian economy. International Educative Research Foundation and Publisher.

Onuchuku, O., & Adoghor, G. (1999). *Econometrics: An introduction to ordinary least squares regression analysis.* Imo State: Springfield Publishers.

Oriavwote, V., & Eshenake, S. (2014). *An empirical assessment of financial sector development and economic growth in Nigeria.* Department of Social Sciences,

Economic and Development studies programme, Federal University Otuoke, Bayelsa State.

Popiel, P.A. (1990). *Developing financial markets international finance corporation*, Washington.

Schumpeter, J. A. (1912). *Theorie der wirtschaftlichen, entwicklung. Leipzig: Dunker and humblot*, [The theory of economic development, translated by Redivers Opie. Cambridge, MA: Harvard University Press, 1934].

Shaw, E. (1973). *Financial deepening in economic development*, Oxford University Press, New York.

Singh, A. (1997). Financial liberalization, stock markets and economic development. *The Economic Journal*, 107, 771-782.

Stiglitz, J. (1985). Credit markets and the control of capital. *Journal of Money, Credit and Banking, 17*, 133-152.

Wolde-Rufael, Y. (2009). Re-examining the financial development and economic growth nexus in Kenya, *Economic Modelling, 26*(6), 1140-1146.

World Bank, World Development Report, (1991). As in Todaro, M. P. and Smith S. C (2006) Economic Development 9th edition p16