

# The Impact of Financial Deepening on Economic Growth: Evidence from Nigeria

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## Abstract

This paper examined the impact of financial deepening on economic growth in Nigeria. Adopting the supply-leading hypothesis using variables such as broad money velocity, money stock diversification, economic volatility, market capitalization and market liquidity as proxies for financial deepening and gross domestic product growth rate for economic growth, we found that broad money velocity and market liquidity promote economic growth in Nigeria while money stock diversification, economic volatility and market capitalization did not within the period studied (1992-2008). Government policy should therefore be geared towards strategically increasing money supply and promoting efficient capital market that will enhance overall economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources from traditional sectors to growth inducing sectors (such as manufacturing and industry, agriculture and the services sectors) and also promote competent entrepreneurial response in various sectors of the economy.

**Keywords:** Financial Deepening, Economic Growth, Supply-leading Hypothesis

## 1.0 Introduction

The search for ways of bettering the standard of living of citizens has opened the corridors for alternative view points on paradigms of economic growth and development. Financial deepening has been identified as one of those strategies whose implementation can quicken the pace of development. However, the effect of this strategy needs to be determined and examined from time to time especially for developing economies. A study of existing literature reveals two main conflicting theories on the effect of financial deepening. These are the supply-leading hypothesis and the demand-following hypothesis.

The supply-leading hypothesis states that the presence of efficient financial markets increases the supply of financial services in advance of the demand for them in the real sector of the economy. It is the contention of this hypothesis that well functioning financial institutions can promote overall economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources from traditional sectors, to growth inducing sectors, such as manufacturing and industrial, agricultural and the services sectors and also promote competent entrepreneurial response in these sectors of the economy (McKinnon, 1973; Shaw, 1973; Fry, 1978; Diaz-Alejandro, 1985; Moore, 1986). The argument therefore, is for policy makers to focus on government policies aimed at promoting financial deepening in countries which must be persistent and sustainable in order to foster economic development (Darrat, 1999).

The main alternative view to the supply-leading hypothesis is the demand-following hypothesis which posits that financial markets develop and progress following the increased demand for their services from the growing real economy. Evolution in financial markets is simply seen as a passive response to a growing economy. As the real sector expands and grows, the growing real sector will generate increased new demands for financial services which in turn will exert and intensify pressures to establish larger and more sophisticated financial institutions to satisfy the new demand for these services and in this way, financial deepening is merely a by-product or an outcome of growth in the real sector of the economy (Robinson, 1952; Patrick, 1966; Ireland, 1994; Demetriades and Hussein, 1996; Darrat, 1999).

The two paradigms appear to be in conflict with each other, revealing opposing patterns of the causal relationship between financial deepening and economic growth, each having different implications for policy makers. Thus, while the supply-leading hypothesis holds that financial deepening promotes economic growth, the demand-

following hypothesis argues for a reverse relationship between economic growths and financial deepening. Nigeria is a developing country that has adopted several policies in order to strengthen and deepen its financial sector, hence it is against this background that this paper seeks to examine the impact of financial deepening on economic growth in Nigeria from 1992 to 2008, using broad money velocity, money stock diversification, economic volatility, market capitalization and market liquidity as proxies for financial deepening.

This paper is subsequently divided into five sections. Section one is the introduction. Section two reviews literature on financial deepening and economic growth. Section three reveals the methodology adopted for the study, while section four discusses the results of findings, and lastly section five contains our conclusion and policy implications.

## 2.0 Review of Related Literature

The earliest establishment of the link between finance and growth in literature could be traced to the work of Schumpeter (1911) in which he contends that entrepreneurs require credit in order to finance the adoption of new production techniques with banks as key agents to facilitate financial intermediating activities. In this way, it is expected that a well functioning banking system will provide intermediation services to productive entrepreneurial activities which will spur technological, innovative, and productive activities that increase real sector growth. Gurley and Shaw (1955), Goldsmith (1969) and Hicks (1969) have also argued along this line, positing that development of a financial system is crucial in stimulating economic growth and under-developed financial systems retard economic growth hence policies aimed at expanding the financial system should be formulated in order to foster growth.

McKinnon (1973) and Shaw (1973) have also emphasized on the role of financial intermediaries and financial markets in the growth process. The McKinnon model assumes that investment in a typical developing economy is mostly self-financed hence given its lumpy nature, investment cannot materialize unless sufficient saving is accumulated in the form of bank deposits (McKinnon, 1973). Also, Shaw (1973) has postulated that financial intermediaries promote investment and raise output growth through borrowing and lending. The result of such financial liberalization, Ang (2007) argues, will lead to increased output growth.

There has been a surge, since the 1980s in financial development models incorporating financial institutions into endogenous growth (Bencivenga and Smith, 1991; King and Levine, 1993b; Pagano, 1993). Various techniques, such as externalities and quality ladders, were employed to model financial intermediation explicitly rather than taking it for granted as in the McKinnon-Shaw framework. These models support the finance-led argument by demonstrating that financial development reduces informational frictions and improves resource allocation efficiency.

Empirical studies on this subject burgeoned in the 1990s, following the prominent work of King and Levine (1993a). In a study of 80 countries over the period 1960-89 in which they controlled for other factors that affect long-run growth, their results showed that initial level of financial development is a good predictor of the subsequent rates of economic growth. Other studies by Benhabib and Spiegel (2000), Levine, Loayza and Beck (2000) and Rioja and Valev (2004) point to the same conclusion that financial development has a positive impact on economic growth, however, these broad comparative analyses conducted at the aggregate level are unable to account for the complexity of the financial environment and specific institutional context of each individual country (Ang, 2007).

Darrat (1999), contributing to the role of financial deepening on economic growth examined three Middle-Eastern countries of Saudi Arabia, Turkey, and the United Arab Emirates using multivariate Granger causality tests within an error-correction framework. They tried to determine the causal link between financial deepening and economic growth in order to discriminate between several alternative theoretical hypotheses. The results generally support the view that financial deepening is a necessary causal factor for economic growth, although the strength of the evidence varied across countries and across the proxies used to measure financial deepening. The causal relationships were also predominately long-term in nature hence their recommendations that government policies aimed at promoting financial deepening in those countries must be persistent and sustainable in order to foster economic development.

Ang (2007) examines to what extent financial development contributes to output expansion in Malaysia, during the period 1960-2003. Using augmented neoclassical growth framework to provide an evaluation of the impact of financial sector development on economic development and the ARDL bounds procedure, he found that aggregate output and its determinants are co integrated in the long-run, suggesting that financial development, private capital

stocks and the labor force exert a positive impact on economic development whereas the accumulation of public capital appears to curtail output expansion in the long.

### 3.0 Methodology

We adopted the *ex-post facto* research design in this study. Data were collated from the Central Bank of Nigeria Statistical Bulletin while the Multiple Regression Model (MRM) was adopted. The choice of multiple regression models is based on the use of more than single independent variables in a regression model (see, Onwumere, 2005).

The general form for a multiple regression analysis is given in the form below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \mu \dots \dots \dots (1)$$

where

- Y = dependent variable
- $\beta_0$  = equation constant
- $\beta_1, \beta_2 \dots \beta_n$  = coefficients of explanatory variables
- $X_1, X_2 \dots X_n$  = independent or explanatory variables
- $\mu$  = error term

Given the above general multiple regression function and our proxies for financial deepening as broad money velocity, money stock diversification, economic volatility, market capitalization; the following acronyms suffice:

- Gross Domestic Product = GDP
- Broad Money Velocity = BMV
- Money Stock Diversification = MSD
- Economic Volatility = EV
- Market Capitalization = MC
- Market Liquidity = ML

Adopting Levine (2000) modified standard growth regression equation in line with the objectives of this paper to examine the impact of financial deepening on economic growth in Nigeria, we have:

$$EG f (BMV, MSD, EV, MC, ML) = 0 \dots \dots \dots (2)$$

Equation 2 is interpreted as economic growth being a function of broad money velocity, money stock diversification, economic volatility, market capitalization and market liquidity. Rearranging equation 2 in line with the model, we have:

$$EG = \beta_0 + \beta_1 BMV + \beta_2 MSD + \beta_3 EV + \beta_4 MC + \beta_5 ML + \mu \dots \dots (3)$$

### Description of our Explanatory Variables

#### Economic Growth

GDP is proxied in this work for economic growth. It is the total aggregate value of goods and services produced in a country over a given period (normally a year). The GNP which should have been more appropriate is the total value of goods and services produced by all the nationals whether within and outside the country over a given period in the economy. However, it is difficult to compute GNP or get realistic figures especially for Nigeria (a developing country) because of the difficulty involved in generating values for the country's citizens outside the country. Thus, we used the GDP growth rate as the measure of economic growth in this study, hence:

$$GDPGR_n = (GDP_{n2} - GDP_{n1}) / GDP_{n1} \dots \dots \dots (4)$$

where

- GDPGR<sub>n</sub> = Gross Domestic Product Growth Rate
- GDP<sub>n2</sub> = Gross Domestic Product for the current year
- GDP<sub>n1</sub> = Gross Domestic Product for the previous year

#### Broad Money Velocity

This is the ratio of M2 to nominal GDP and is often called the monetization ratio as used by King and Levine (1993). It reflects the depth of the financial market relative to the overall economy. Increases in this ratio indicate further expansion in the financial sector relative to the rest of the economy. We have:-

$$BMV = M2/GDP \dots\dots\dots (5)$$

where

- BMV = Broad Money Velocity
- M2 = Total Monetary Liability
- GDP = Gross Domestic Product

**Money Stock Diversification**

This is the ratio of demand deposits to the narrow money stock. Vogel and Buser (1976) argue that this measure represents the complexity, or sophistication of the financial market (primarily banks). An increase in this ratio implies a higher degree of diversification of financial institutions and a greater availability or use of non-currency balances (bank deposits) in the transaction process. In this paper, we adopted narrow money stock denoted as M1. Therefore;

$$MSD = DD/M1 \dots\dots\dots (6)$$

Where

- MSD = Money Stock Diversification
- DD = Demand Deposit
- M1 = Money Supply

**Economic Volatility**

This reflects the extent to which financial services are provided to the private sector. It is a measure of financial development. It is credit issued by financial institutions to the non-financial private sector as a share of GDP. The use of this measure is because it is more inclusive than other measures of financial development, and it also captures an important activity of the financial sector; namely, channeling funds from savers to investors in the private sector (Ang, 2007). Thus, it was proxied as:

$$EV = \text{Credit to Private Sector}/GDP \dots\dots\dots (7)$$

where

- EV = Economic Volatility
- GDP = Gross Domestic Product

**Market Capitalization**

Market Capitalization is a measure that equals the value of listed shares divided by GDP. The assumption behind this measure is that overall market size is positively correlated with the ability to mobilize capital and diversify risk on an economy-wide basis hence adopting Demirguc-Kunt and Levine (1996), Levine and Zervos (1998) approach, we proxied market capitalization as:-

$$MC = \text{Market Capitalization}/GDP \dots\dots\dots (8)$$

where

- MC = Market Capitalization
- GDP = Gross Domestic Product

**Market Liquidity**

Two main measures of market liquidity are found in literature, market turnover ratio and market value traded ratio. While market-turnover ratio equals the value of total shares traded divided by market capitalization, the market value traded ratio measure is given as total value of shares traded on the Stock Exchange. The ratio equally measures the

organized trading of firm equity as a share of national output. In this way, it should positively reflect liquidity on an economy-wide basis. In this paper, we adopted the market-value traded ratio because of its economic wide approach in measuring market exchange divided by GDP (see, Guha Deb and Mukherjee, 2008). Thus, we have:-

$$ML = \text{Total Value of shares traded/GDP} \dots\dots\dots (9)$$

where

$$\begin{aligned} ML &= \text{Market Liquidity} \\ GDP &= \text{Gross Domestic Product} \end{aligned}$$

**4.0 Results/Findings**

From the analysis/results, broad money velocity, also called monetization ratio represented by M2/GDP had a positive non- significant impact on gross domestic product growth rate in Nigeria (t = .185, coefficient of BMV = .919). This ratio indicates that an expansion of the financial sector will impact positively on the economy though insignificantly. Money stock diversification, represented by DD/MI, had a negative non-significant impact on Gross Domestic Product growth rate (t =-.712, MSD coefficient = -.734). The implication is that the Nigerian economy is not sophisticated enough to increase the degree of diversification of financial institutions which will provide greater availability or use of non currency balances (bank deposits) in its matrix. Also, economic volatility, represented by credit to the private sector/GDP, had a negative non-significant impact on gross domes product growth rate in Nigeria (t = -.888, EV Coefficient = -6.742). The result indicates that the financial services sector did not impact positively as expected to induce economic growth. Market capitalization, represented by MC/GDP, had a negative non-significant impact on economic growth in Nigeria (t =-749, MC Coefficient -1.006) during the period studied, implying that the size of the Nigeria Stock Market is yet to mobilize capital and diversify risk on an economy-wide basis. However the market liquidity, represented by total value of shares traded/GDP, had a positive non-significant impact on economic growth (t = .979, ML Coefficient = 20.276). This implies that the Nigerian Stock Market enhances liquidity though not significantly, thus deepening the economy. The result also indicates that there was a positive relationship between the broad money velocity/market liquidity and economic growth while there was a negative relationship between money stock diversification/ economic volatility/ market capitalization and economic growth.

**5.0 Policy Implications/Conclusion**

This paper examined the impact of financial deepening on economic growth in Nigeria adopting the supply-leading hypothesis. It was revealed that broad money velocity and market liquidity provided by the Nigerian Stock market promotes economic growth in Nigeria. A further expansion of the financial sector will impact positively on the economy. In view of the findings emanating from this study while the desired impacts are yet to be achieved, government policy direction should focus on money stock diversification, economic volatility and market capitalization which the result indicates are yet to make positive and significant impact on growth. Nevertheless, they are still desired for enhancing overall economic growth. Government policies should also be geared towards increasing money supply and efficient capital market that will enhance overall economic efficiency, increase investor confidence, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources from traditional sectors to growth inducing sectors and also to promote competent entrepreneurial response in various sectors of the economy.

## Appendix

**Table 1 Collated Measurement Proxies**

Years	M1 (N,000)m	M2 (N,000)m	Demand Deposit (N,000)m	Value of Shares Traded (N,000)m	Market Capitalization (N,000)m	Credit to the Private Sector (N,000)m	GDP at Current factor Cost(N,000)m
1992	53,115.2	129,085.5	39,241.7	491.7	31,200	76,098.7	536,305.1
1993	79,725.8	198,479.2	60,908.3	804.4	47,500	91,239.3	688,136.8
1994	97,553.4	266,944.2	78,790.5	985.9	66,300	145,103.9	904,004.7
1995	117,349.0	318,763.5	94,571.0	1,838.3	180,400	204,945.1	1,934,831.0
1996	142,869.1	370,334.5	111,343.4	6,979.6	285,800	255,558.8	2,703,809.0
1997	161,108.4	429,731.3	137,954.9	10,330.5	281,900	316,577.3	2,801,972.6
1998	207,061.8	525,637.8	161,859.9	13,571.1	262,600	370,706.7	2,721,178.4
1999	306,654.9	699,733.7	206,622.8	14,072.0	300,000	452,411.1	3,313,563.1
2000	396,348.4	1,036,079.5	363,720.6	28,153.1	472,000	587,486.2	4,727,522.6
2001	499,161.5	1,315,869.1	478,036.5	57,683.8	662,500	827,122.9	5,374,334.8
2002	653,241.2	1,599,494.6	559,311.1	59,406.7	764,900	938,271.2	6,232,243.6
2003	759,632.5	1, 985,191.8	813,404.1	120,402.6	1,359,300	1,191,546.5	6,061,700.0
2004	932,930.1	2,263,587.9	872,071.3	225,820.0	2,112,500	1,507,885.2	11,411,066.9
2005	1,089,450.3	3,307,667.8	1,162,163.8	262,935.8	2,900,100	1,950,379.8	15,610,881.5
2006	1,747,252.8	4,027,901.7	1,629,705.3	470,253.4	5,121,000	2,556,919.7	18,564,594.7
2007	2,693,554.3	5,809,826.5	2,378,404.9	1,076,020.4	13,294,500	4,968,967.3	20,657,317.7
2008	4,309,523.1	9,167,067.6	3,964,636.7	1,679,138.7	9,516,200	7,909,783.8	23,842,170.7

Source: CBN Statistical Bulletin (50<sup>th</sup> Anniversary Edition)

**Table 2 Computed Values of Proxies**

Years	BMV	MSD	EV	MC	ML	GDPGR
1992	0.2406941	0.738804	0.14189442	0.0581758	0.0009168	0.693577
1993	0.2884299	0.763972	0.1325889	0.069027	0.001169	0.283107
1994	0.2952907	0.807665	0.16051233	0.0733403	0.0010906	0.313699
1995	0.16475	0.805895	0.10592403	0.0932381	0.0009501	1.140289
1996	0.1369677	0.779339	0.09451807	0.1057027	0.0025814	0.397439
1997	0.1533674	0.856286	0.11298372	0.1006077	0.0036869	0.036306
1998	0.1931655	0.781699	0.13623021	0.0965023	0.0049872	-0.02883
1999	0.2111726	0.673796	0.13653312	0.090537	0.0042468	0.217694
2000	0.2191591	0.917679	0.12426936	0.0998409	0.0059551	0.426719
2001	0.2448432	0.957679	0.15390238	0.1232711	0.0107332	0.136818
2002	0.2566483	0.856209	0.15055111	0.1227327	0.0095322	0.159631
2003	0.3274975	1.070786	0.19656969	0.224244	0.0198628	-0.02736
2004	0.198368	0.934766	0.13214235	0.1851273	0.0197896	0.882486
2005	0.211882	1.066743	0.1249372	0.1857743	0.0168431	0.368047
2006	0.216967	0.932724	0.137731	0.275848	0.0253307	0.189209
2007	0.281248	0.882999	0.240543	0.643573	0.052089	0.112727
2008	0.38449	0.919971	0.331756	0.399133	0.070427	0.154176

Source: Researchers Computations 2011

Note: BMV= broad money velocity, MSD = money stock diversification, EV = economic volatility, MC = market capitalization, ML = market liquidity, GDPGR = gross domestic Product growth rate.

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