

The Link between Money Market and Economic Growth in Nigeria: Vector Error Correction Model Approach

Ehigiamusoe, Uyi Kizito

Abstract—The paper examines the impact of money market on economic growth in Nigeria using data for the period 1980-2012. Econometrics techniques such as Ordinary Least Squares Method, Johanson's Co-integration Test and Vector Error Correction Model were used to examine both the long-run and short-run relationship. Evidence from the study suggest that though a long-run relationship exists between money market and economic growth, but the present state of the Nigerian money market is significantly and negatively related to economic growth. The link between the money market and the real sector of the economy remains very weak. This implies that the market is not yet developed enough to produce the needed growth that will propel the Nigerian economy because of several challenges. It was therefore recommended that government should create the appropriate macroeconomic policies, legal framework and sustain the present reforms with a view to developing the market so as to promote productive activities, investments, and ultimately economic growth.

Keywords—Economic Growth, Investments, Money Market, Money Market Challenges, Money Market Instruments.

I. INTRODUCTION

THE existence of money market facilitates trading in short-term debt instruments to meet short term needs of large users of funds such as governments, banks, and similar institutions. Money market plays a key role in bank's liquidity management and the transmission of monetary policy. By providing the appropriate instruments and partner for liquidity trading, the money market allows the refinancing of short and medium term positions and facilitates the mitigation of business liquidity risks. The banking system and the money market represent the exclusive setting in which monetary policy operates. Developed, active, and efficient interbank and money markets enhance the efficiency of central bank's monetary policy and the transmission of its impulses into the economy. Thus, the development of the money market smoothen the progress of the financial intermediation and boost lending to the economy, and improves the country's economic and social welfare.

Well developed money markets exist in developed countries, particularly in the high income ones, while those in the low income countries mirror the state of their development. In the latter, the markets are narrow, poorly integrated, and in some instances, non-existent in the real

sense of it [24]. The level of development of a money market serves as a barometer for measuring the level of development of the economy. They assert that the degree and tempo of development of one reflects the spate of development of the other.

The money market is one of the categorizations of the financial markets. The other category is the capital market. While the money market deals in short-term funds, the capital market deals in long-terms loanable funds [5]. The basis of distinction between the money and capital market lies in the degree of liquidity of instruments bought and sold in each of the markets. As a constituent of the financial markets, the capital market facilitates the mobilization of long-term investment capital for the financing of business enterprises as well as government long-term investment projects. It also offers opportunities for both private business and government to mobilize huge amount of financial resources from the general public through the sale of financial securities.

Unlike the capital market, the money market plays an important role in the mobilization of financial resources for short term investment through financial intermediation. Well functioning money markets are very crucial for the promotion of global integration. An efficiently functioning domestic financial market can better position a country's competitiveness in the market for global capital [33]. Through an efficient intermediation process, money markets improve the productivity of investment by channeling funds to the most profitable investment projects which translate into economic growth.

The Nigerian economy has numerous human, material and natural resources, yet, the pace of economic development has been rather slow, and many analysts have argued that the economy is experiencing underdevelopment when compared to the 1960s and 1970s [9]. The Nigerian economy has experienced all phases of a typical business cycle. What is disturbing is that the boom(s) - commodity, financial and mineral resources, were not linked to the real sector. Each boom came and went, yet the economy remained backward and undeveloped [9]. From political independence in 1960 till date, various regimes and their policy makers attempted to managed the economy to ensure full employment, output and price stability. The management of the economy was based on various economic and socio-political conceptualization, formulation, strategies, programmers and inherent implementation methodologies.

Ehigiamusoe, Uyi Kizito is a Research Economist at the Research Division, National Institute for Legislative Studies, National Assembly Abuja, Nigeria (e-mail: ehuiyikizexcel@yahoo.com).

The linkage between the financial sector and economic performance can be captured by the relationship between money supply and gross domestic product (MS-GDP ratio). For instance, the history of the banking sector in Nigeria is traceable to 1892 when the British colonial administration established First Bank of Nigeria. After political independence in 1960 and until 1990s three major banks namely, First Bank of Nigeria, Union Bank and United Bank of Africa dominated the money market. However, in 1986 the banking sector witnessed a major shift in policy ushering in deregulating initiatives that lowered the barriers to entry. Consequently, banking licenses were issued to a variety of domestic and foreign investors bringing the total number of major banks in Nigeria to 119 in 1991. In the early 1990s however, the sector began to experience systemic challenges, culminating in a crises of confidence characterized by deleveraging, skyrocketing loan defaults and ultimately the collapse of more than 30 banks by the mid 1990s. This development led to major reforms in the banking sector including the conversion of commercial and merchant banks to universal banks with an increase minimum share capital to N2 billion. At the turn of the Millennium, it was clear that the Nigerian banking sector was still struggling with systemic crises that left it on the verge of collapse. According to [38] the beleaguered sector was characterized by negative features such as: low aggregate banking credit to the domestic economy (20 percentage of GDP); systemic crises prompting resort to central bank bailouts; inadequate capital base; oligopolistic structure of banks; poor corporate governance; low banking/population density 1:30,432; payment system that encouraged cash-based transactions, among others.

In view of the banks weak balance sheets and their inherent inability to provide long-term financing for the Nigerian real sector, additional reforms became inevitable. Consequently, in 2004, another round of reform was initiated aimed at consolidating the banking industry. Minimum capital requirement for banks was increased to N25 Billion. The development triggered a wave of mergers and acquisitions in the industry with 25 strong banks emerging in 2005 out of 89 banks in 2004. The central Bank also introduced additional incentives to strengthen their balance sheets further. It offered an opportunity for a category of banks tagged 'Mega Banks' to manage a portion of the Nigeria's foreign exchange reserves in association with reputable global financial institutions.

Undoubtedly, the bank consolidation initiative was acknowledged as a positive development of the banking sector ushering in an era of bank stability which has eluded the sector since the inception of sectoral reforms in the 1980s. The emergence of the global financial crises has however unsettled the relative stability subsisting in the Nigeria's banking sector since its consolidation in 2004. The plummeting government revenue from crude oil proceeds has reduced public sector deposits a major revenue earner for Nigerian banks [14]. Also, the global economic meltdown caused a reduction in the remittances sent to Nigeria by the nation's diaspora community. By the end of 2008, indications began to emerge that the nation's banking sector may be set for another round

of instability. The new administration of the apex bank moved quickly to stem the tide of instability that has emerged in the banking sector [14]. A system wide audit of ten banks in the nation was carried out in the first instance, and five out of the ten banks investigated were seriously indicted. It was discovered that most of the banks suffer from high level of non-performing loans attributed to poor corporate governance practices, leaving the banks undercapitalized. To rescue the situation, the Central Bank of Nigeria injected some capital into the banking sector to ensure stability.

Although the money market in Nigeria has witnessed some expansion in recent times, there are still observed problems which the market is contending with. Despite these various reforms, the Nigerian money market is still shallow compared to money markets in some advanced and emerging countries. The question that comes to mind is: does the Nigerian money market promote or hinder economic growth? This paper is out to find answer to this question. As the theoretical debate on the relationship between money market and economic growth in Nigeria continues, more empirical works are needed to establish the direction of the relationship between money market and economic growth. The broad objective of the study is to examine the Nigerian money market and its impact on economic growth. Specifically, the paper seeks to examine the challenges facing money market development in Nigeria and recommend policy options on how money market can be effectively utilized to accelerate economic development in Nigeria.

Following this introduction, the remaining part of the paper is divided into five parts. Section two deals with the theoretical and empirical issues while section three presents the methodology adopted for the study. Section four presents the results of data analysis, the major findings and policy options were summarized in section five. The last part of the paper concludes the study.

II. THEORETICAL FRAMEWORK AND EMPIRICAL ISSUES

A. Theoretical Framework

Modern growth theory developed by [12], [21] and [29] identifies two main channels through which the financial sector might affect long-run growth in a country. They include; through catalyzing the capital accumulation (including both human and physical capital) and by increasing the rate of technological progress. The five basic functions of an efficiently working financial sector (such as mobilizing and pooling savings; producing information ex-ante about possible investments and allocating capital; monitoring investments and exerting corporate governance; facilitating the trading, diversification and management of risks; and facilitating the exchange of goods and services) allow the above two channels to work for promoting growth by mobilizing savings for investment; facilitating and encouraging capital inflows; and allocating the capital efficiently among competing uses [23].

Financial intermediation theory was first formalized in the works of [13], [22], and [35] 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. According to [13], the positive correlation between financial development and the level of real per capita GNP is attributed to the positive impact that financial development has on encouraging more efficient use of the capital stock. Also, the growth process has impact on financial markets because it creates incentives for further financial development. McKinnon's thesis is based on the complementarity hypothesis, which is in contrast to the Neo-classical monetary growth theory. He argued that there is a complementarity between money and physical capital which is reflected in money demand. This complementarity links the demand for money directly and positively with the process of physical capital accumulation because the conditions of money supply have a first order impact on decision to save and invest. Furthermore, [35] proposed a debt intermediation hypothesis, whereby expanded financial intermediation between the savers and investors resulting from financial liberalization (higher real interest rates) and development increase the incentive to save and invest, stimulates investments due to an increase supply of credit, and raises the average efficiency of investment. This view stresses the importance of free entry into and competition within the financial markets as prerequisites for successful financial intermediation [7].

References [22] and [35] also posited that policies that adversely affect the financial markets would adversely affect the incentive to save because it will cause repression of the financial markets. The key elements of financial repression according to them include: high reserve requirements on deposits; legal ceilings on bank lending and deposit rates; directed credit; restriction on foreign currency capital transactions; and restriction on entry into banking activities. Even though the McKinnon-Shaw framework informed many low income countries to design and reform their financial sectors, experiences later showed that the McKinnon-Shaw framework explain some of the quantitative changes in savings and investment at the aggregate level but it failed to describe the micro-level interactions in the financial markets and among financial institutions. This affects the supply of savings and the demand for credit by economic agents and the subsequent effect on economic growth. Consequently, the agency theories of financial intermediation were developed.

The link between financial sector and real economy has long been believed by economists that financial markets and institutions are important factors in supporting economic development (See [13], [22], [32] and [35]). However, these early literature failed to give theoretical linkage between financial development and growth. Recently, many economists have developed a model that drives a formal link between financial intermediation and growth. This literature considers two interrelated issues: it analyses how financial intermediation affects economic growth, and it studies how economic growth might itself affect the evolution and growth of financial intermediation. Reference [18] for instance agrees that financial intermediaries enhance economic efficiency and,

eventually, growth by helping to allocate capital to its best uses. Several other cross-country and panel data studies such as [15], [16] and [19] showed that financial development had a positive impact on economic growth.

Many economists point out that not only financial development allows for economic growth but economic growth increases the incentive for financial development. Efficient financial systems help countries to grow by mobilizing additional financial resources and by allocating those resources to the best uses. As economies develop, so must the financial systems that serve them. As the financial system grows, efficient channeling of funds lowers both the transfer costs and risk-taking from savers to borrowers. The financial intermediary allows a better allocation of resources in the economy and therefore stimulates capital accumulation and growth. On the other hand, as a consequence of economic growth, investors increase their participation in financial market. The financial intermediaries lead to a better allocation of savings to investment, increases the rate of capital accumulation and the growth rate of the economy [23]. Financial sector development and economic development are inter-related. No economy can grow and improve the living standards of its population in the absence of a well-functioning and efficient financial sector. A sound and healthy banking system is directly related to economic growth and development.

B. Empirical Review

Several studies have been conducted on the relationship between financial intermediation and economic growth. The financial system has long been known in the literature to play an important role in the economic development of a country. But the financial market is divided into two major markets namely capital and money markets. Some earlier studies have examined the relationship between the capital market and economic growth in Nigeria and majority of these studies have showed that capital market promotes economic development ([6], [17] and [25]). On the other hand, not much empirical works have been done to show the impact of the money market on economic growth in Nigeria. Empirical evidences are divided as to the relationship between money market and economic growth. Reference [11] show that financial intermediation promotes economic growth. Similar conclusion was arrived at by [4] and [1], while, [8], [21], [26], [39] and [36], suggest otherwise.

Reference [13], using a cross-section of 80 countries during the period 1960-1989 found that financial development promotes economic growth when other growth conditioning variable are taken into account. Also, [22] provides country-specific evidence in a study that focuses on the economies of Argentina, Brazil, Chile, Germany, Indonesia, Korea, and Taiwan during the post-World War II period. Examining the relationship between adopted financial policies and economic growth in these countries, McKinnon concluded that better functioning financial system aid faster growth. Related cross-country studies by [16], [20], and [41] gave empirical evidence supporting the hypothesis that financial development

enhances economic growth. With respect to African economies, [10] provides evidence that although there remains much to be done, financial reforms in many adjusting African countries has contributed positively to economic growth [30].

In another studies, [15] employed a dataset comprising 159 countries over 1960-1999 and their analysis confirm a strongly positive and statistically significant relationship between financial depth indicators covering banking system and securities market and economic growth. Reference [34] used a Granger causality procedure to investigate the relationship between financial development and economic growth for nine OECD countries and China by estimating a vector autoregression (VAR) model. The results of their study show that five out of ten countries have a bilateral Granger causality; three of them have reverse causality with economic growth leading to financial development while two countries do not have a causal effect at all.

Reference [31] agrees that a competitive banking sector is necessary in facilitating firm growth and competition, and that equity markets constitute only a small portion of overall financing in developing countries. The author underscores the importance of scale for banks, and tiny banks will not garner sufficient capital to finance small businesses for expansion. In particular, the banking sector should be established and tailored to improve the real economy and, as a tool to create jobs and opportunities. Reference [31] proposes a two-tier banking system where one tier consist of small banks that serve basic financial needs and the other tier should consist of larger banks that serve medium firms that can create jobs for many others and will grow to large scales.

Reference [3] in a study of the transmission mechanism of monetary policy in Pakistan asserted that the role of bank lending is prominent because of the dominance of the banking sector. Other factors that might have enhanced the banks' role included financial reforms, market-based credit allocation and crowding-in of private sector credit due to the decline in fiscal dominance. The extant literature shows that the bank lending channel is an important medium through which monetary policy permeates the real sector of the economy. Therefore, in the pursuit of price stability by monetary authorities, the consideration of the impact of lending on monetary aggregates is a necessary condition for attaining macroeconomic stability. A major implication of the credit view is that monetary policy will have a greater effect on expenditure by smaller firms, which are more dependent on bank loans than it will on large firms, which can access the credit markets directly through stocks and bond markets.

According to [20], the form and function of financial institutions are country-specific and would rely on the legal and political system as well as the evolving economic activities. He, therefore, argues that a suitable policy objective would be to craft laws, regulations, and institutions that would create an enabling environment to engender competition among financial institutions in the provision of essential credit, risk, and liquidity services to the real economy. He states that although the stock markets do not provide much capital to firms, they provide complementary risk

diversification services that facilitate the efficient allocation of credit.

Reference [41] favors a more fragmented and competitive banking sector, which according to him creates a fluid transition from a pure banking system to a system that relies both on markets and banks, as economic activities expand. To [40], developing countries require not only small banks and microfinance institutions that support small borrowers, but could also do with relatively sophisticated financial instruments such as hedging price risks through futures markets, insuring against crop failures, purchasing farm equipment through pooling arrangements, and managing the problem brought about by seasonality. He acknowledges inadequate information on the financial history and worthiness of potential borrowers as a challenge and that small banks were better positioned to collect such information.

III. METHODOLOGY

Econometrics methodology is employed in this study as the analytical tool for the examination of the relationship between money market and economic growth. Consequently, the Ordinary Least Squares method is adopted to investigate the long-run relationship between money market and economic growth. The Error Correction Model is also adopted to examine the short-run dynamics. The model states that economic growth is a function of labour, physical capital, ratios of broad money supply, private sector credit and real interest rate. To further examine the relationship between money supply and economic growth in Nigeria, the study employed Johanson's Cointegration Test. The secondary data used for this study covering the period 1980-2012 were obtained from the World Bank Database, Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, Global Development Finance Statistics and International Development Statistics.

A. Model Specification

The standard methodology of growth models begins with the neo-classical production function as extended by [37]. Consider a production function of the form.

$$Y = T f(L, K) \quad (1)$$

where, Y= Output, L= Labour input, K= Capital input, and T= Technical change

Taking technical change constant, (1) becomes

$$Y = A f(L, K) \quad (2)$$

re-writing (2) in growth terms and for estimation purpose gives

$$GY = \alpha_0 + \alpha_1 GK + \alpha_2 GL + U \quad (3)$$

In order to examine the impact of money market on economic growth, variables such as ratios of broad money supply, private sector credit and real interest rate were

introduced into the models to capture the relationship between money market and economic growth. Therefore, introducing other endogenous variables into (3) in accordance with endogenous growth theory, we arrive at (4)

$$G_t = T_t \alpha_1 L \alpha_2 K \alpha_3 MMI \quad (4)$$

where: MMI = Additional Input (Money Market Indicators)
 given that

$$MMI = f(M2GDP, CPS/GDP, RINT) \quad (5)$$

where;

M2GDP = ratio of broad money supply to GDP

CPS/GDP = ratio of private sector credit to GDP

RINT = real interest rate

Substituting (5) into (4) yields (6)

$$GDP = \alpha_0 + \alpha_1 LAB + \alpha_2 CAP + \alpha_3 M2GDP + \alpha_4 CPS/GDP + \alpha_5 RINT + U \quad (6)$$

where; α_0 = constant term

$\alpha_2, \alpha_3, \alpha_4, \alpha_5$ = slope coefficients representing parameters to be estimated.

U = Disturbance term assumed to be purely random.

On a *priori* expectation, $\alpha_1 > 0, \alpha_2 > 0, \alpha_3 > 0, \alpha_4 > 0, \alpha_5 < 0$

Developments in the financial sector require a set of indicators for formulating, implementing and evaluating effective policies. Hence, in the literature, there is no precise definition of financial sector development. According to scholars, however, the key to financial sector development is the reduction and, ultimately unification of fragmented financial markets. This involves a complete set of indicators mainly covering credit intermediation, liquidity management and risk management characteristics of the financial system. Reference [13] used a set of measures, which he called the "financial interrelations ratio" to trace the relationship between financial sector and economic development. In many studies, the ratio of broad money (M2) to GDP is used to observe the changes in the size of the financial system relative to that of the economy [27].

Reference [28] analyzed eleven indicators of financial depth in Nigeria. The indicators include: broad money (M2) as a ratio of GDP at current market prices; banking sector credit to private sector (PSC) as a ratio of GDP; currency outside bank (COB) as a ratio of broad money (M2); interest rate spread (IRS) measured as the different between savings and prime lending rate; real interest rate (RIR), measured as the difference between inflation and saving rates; loans as a ratio of deposit (L/DR); total assets of banks (TA) as a ratio of GDP; Loans and advances (LA) as a ratio of GDP; Gross savings (GS) as a ratio of GDP; gross domestic investment (GDI) as a ratio of GDP; and capacity utilization in manufacturing (MCU).

Following the McKinnon and Shaw hypotheses, [1], [2] and [16], a model showing the relationship between money market and economic growth is developed. This model is a modified production function and it is complemented by a series of

control variables usually introduced in the growth models. The growth of the economy is specified to depend on money market indicators.

To proxy money market, the paper adopts indicators of financial intermediation such as the ratio of liquid liabilities of financial intermediaries to GDP which is the measure of financial depth (the ratio is measured as M2/GDP). Other alternatives that are explored in the analysis to measures money market include ratio of bank deposit to GDP and ratio of bank's credit to the commercial sector to total credit or GDP. The choice of the measures of money market is motivated by McKinnon and Shaw's proposition that the extent of financial intermediation through the supply of credit to the private sector determines both the quantity and quality of investment, and hence, economic growth. Based on past studies, economic growth is proxy by GDP growth. Following the assumption of [22] that all economic units are self-financed, it is instructive to note that an investor must accumulate money balances before he or she is able to invest. This accumulation is encouraged if there is a positive real deposit interest rate. A positive real interest rate lowers the opportunity cost of accumulating balances and encourages individuals to deposits their money in banks. This allows accumulation of loanable funds from which investors can borrow [2].

IV. EMPIRICAL RESULTS, INTERPRETATION AND ANALYSIS

A. Unit Root Tests

The unit root test was conducted to ascertain the stationarity of the data before estimation using both the Augmented Dickey Fuller (ADF) and the Philips-Perron (PP). The results of the test presented in Table I show that all the variables (except the ratios of broad money supply and private sector credit) are stationary at levels at 1 per cent significant level. Since all the variables (except the ratios of broad money supply and private sector credit) in the model are stationary at levels at 1 per cent significant level, the hypotheses that state the presence of unit roots in all the variables under consideration (except the ratios of broad money supply and private sector credit) are rejected. This shows that all the variables included in the model are stationary at level while the ratios of broad money supply and private sector credit are stationary at first difference at 1 per cent significant level. Given the unit-root properties of the variables, we proceeded to conduct the cointegration test to ascertain the long-run relationship between money market and economic growth.

TABLE I
 UNIT ROOT TEST RESULTS

Variables	ADF Test Statistic		Phillips-Perron Test Statistic		Conclusion
	Level	1st Difference	Level	1st Difference	
RGDP	-3.88*	-7.47	-3.88*	-11.21	I(0)
LAB	-5.05*	-9.44	-26.3*	-48.83	I(0)
CAP	-6.59*	-11.6	-6.5*	-11.78	I(0)
M2/GDP	0.53	-3.75	0.578	-6.081	I(1)
CPS/GDP	0.97	-4.22	0.978	-4.936	I(1)
RINT	-3.56*	-6.69	-5.4*	-9.996	I(0)
1% Critical Value	-3.6	-3.64	-3.64	-3.59	
5% Critical Value	-2.95	-2.95	-2.95	-2.93	
10% Critical Value	-2.61	-2.61	-2.61	-2.60	

*indicates significant at 1% or a rejection of the null hypothesis of no unit root at the 1% level

B. Johansen Cointegration Test Results

The Johansen cointegration test result in Table II shows the existence of two cointegrating equations at 5% significance level in the model. The hypothesis which states there is no long-run relationship between money market and economic growth is rejected at 5% significance level. This implies that there exists a long-run relationship between money market and economic growth in Nigeria.

TABLE II
 JOHANSON'S COINTEGRATION TEST RESULT

Date: 11/09/13 Time: 14:19				
Sample: 1980 2012				
Included observations: 31				
Test assumption: Linear deterministic trend in the data				
Series: RGDP LAB CAP M2GDP CPSGDP RINT				
Lags interval: 1 to 1				
Eigen value	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.880929	145.1654	94.15	103.18	None **
0.711082	79.19616	68.52	76.07	At most 1 **
0.434467	40.70620	47.21	54.46	At most 2
0.396631	23.03661	29.68	35.65	At most 3
0.197463	7.374601	15.41	20.04	At most 4
0.017754	0.555312	3.76	6.65	At most 5

** denotes rejection of the hypothesis a 5% (1%) significance level
 L.R. test indicates 2 cointegrating equation(s) at 5% significance level

C. The Long Run Regression Results

Having conducted the unit root and cointegration tests, we proceeded to obtain the long-run results of the relationship between money market and economic growth using the ordinary least squares method. The result presented in Table III reveals that all the variables in the model (except the ratio of broad money supply and labor growth rate) satisfy the a priori expectations with respect to their signs. But the ratio of broad money supply and labor growth rate has negative impact on economic growth. The result further shows that the ratio of broad money supply has significant impact on growth at 10 percent significant level in the long-run. This means that a unit increases in the ratio of broad money supply will decrease gross domestic product by 5.4 percent. Similarly, the growth rate of labor has a negative and statistically significant impact

on growth. A unit increase in the growth rate of labor will decrease gross domestic product by 11.0 percent. The impact of the ratio of private sector credit on growth though positive but it is not statistically significant at 10 percent significant level in the long-run. On the other hand, real interest rate and physical capital have positive and statistically significant impact on growth. This means that a unit increases in real interest rate and physical capital will increase gross domestic product by 17.1 percent and 5.9 percent, respectively in the long-run. The adjusted R² of 66.6 percent indicates that 66.6 percent of the variations in the dependent variable are explained by variations in the independent variables and the Durbin Watson statistic of 1.85 suggests that the model is free from serial auto correlation.

TABLE III
 LONG-RUN REGRESSION RESULT

Dependent Variable: RGDP				
Method: Least Squares				
Date: 11/09/13 Time: 12:24				
Sample(adjusted): 1981 2012				
Included observations: 32 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.141626	1.83139	3.35351	0.0025
D(M2GDP)	-0.54909	0.32586	-1.68506	0.1039
D(CPSGDP)	0.08073	0.32870	0.24562	0.8079
RINT	0.171168	0.06339	2.70013	0.0120
LAB	-110.308	49.048	-2.24896	0.0332
CAP	0.059121	0.01905	3.10267	0.0046
R-squared	0.768938	Mean dependent var		3.74562
Adjusted R-squared	0.666811	S.D. dependent var		5.01971
S.E. of regression	3.994348	Akaike info criterion		5.77499
Sum squared resid	414.8253	Schwarz criterion		6.04982
Log likelihood	-86.39998	F-statistic		4.59170
Durbin-Watson stat	1.847843	Prob(F-statistic)		0.00390

D. Vector Error Correction Model Results

The Vector Error Correction Model allows modeling adjustments that lead to a long run equilibrium relationship among the variables where a unidirectional long term causal flow runs from changes in the money market to the growth rate of gross domestic product in Nigeria. To capture the short-run dynamics using the residuals from the co-integration regression as the error correction term, the estimated coefficient of the error correction term ECM (-1) show a negative (-0.058199) and statistically significant values in terms of its associated t-value (-0.279493) and probability value (0.0822).

Starting with the over-parameterized model, we then tested down (dropping the variables with low t-statistic) until we arrived at our preferred parsimonious model as shown in Table IV. The result reveals that all the variables in the model (except the ratio of broad money supply and labor growth rate) satisfy the a priori expectations with respect to their signs in the short-run. The current and one period lagged values of physical capital have positive impact on economic growth in the short-run. While the impact of the current values of physical capital is statistically significant, that of the one

period lagged value is not statistically significant at 10 percent significant level. This means that a unit increases in physical capital will increase growth by 6.6 percent. As for the growth rate of labor, a negative relationship exists between it and growth. In the short-run the impact of labor growth rate on growth is statistically significant at 10 percent significant level in the short-run. If labor growth rate is increase by a unit, growth will decrease by 8.6 percent.

The behavior of the ratios of broad money supply and private sector credit in the short-run follow similar trend in the long-run. The ratio of broad money supply has a negative and significant impact on growth while the ratio of private sector credit has positive and insignificant impact on gross domestic product. Similarly, real interest rate has positive and significant impact on growth in the short-run. This means that a unit increases in real interest rate will increase growth by 16.5 per cent. The adjusted coefficient of determination (R^2) of 71.1 shows a reasonable explanatory power of the model as 71.1 per cent of the variations in the dependent variable is accounted for by variations in the independent variables. The F-statistics of 4.33 suggests that good interactive feedback effect exists within the model, while the Durbin Watson statistic of 1.86 indicates a good fit and an absence of autocorrelation.

TABLE IV
SHORT-RUN PARSIMONIOUS MODEL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.652475	2.07041	2.24715	0.0337
D(M2GDP)	-0.46148	0.20646	-2.23511	0.0346
RINT	0.165884	0.06213	2.66963	0.0131
LAB	-86.8571	50.7674	-1.71088	0.0995
CAP	0.066488	0.02027	3.27896	0.0031
CAP(-1)	0.028612	0.01981	1.44429	0.1611
ECM(-1)	-0.05819	0.20823	-0.27949	0.0822
R-squared	0.809589	Mean dependent var		3.74562
Adjusted R-squared	0.711891	S.D. dependent var		5.01971
S.E. of regression	3.914442	Akaike info criterion		5.75786
Sum squared resid	383.0714	Schwarz criterion		6.07849
Log likelihood	-85.1258	F-statistic		4.32961
Durbin-Watson stat	1.860136	Prob(F-statistic)		0.00396

The graphical illustration in Fig. 1 further depicts the relationship between money market and economic growth in Nigeria. It is obvious from the graph that the ratio of broad money supply (M2GDP), ratio of private sector credit to GDP (CPSGDP) and real interest rate (RINT) do not have positive and significant impact on real gross domestic product (RGDP).

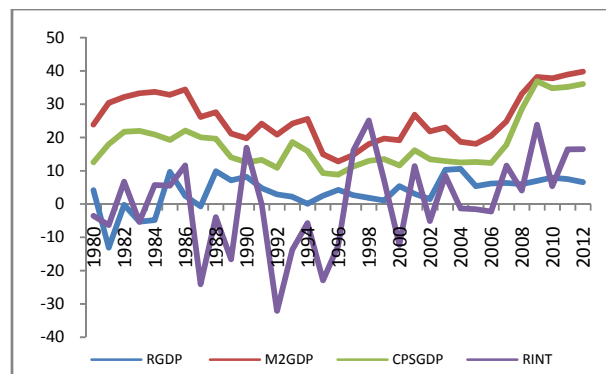


Fig. 1 The relationship between money market and economic growth

V. SUMMARY OF MAJOR FINDINGS AND POLICY OPTIONS

A summary of the major findings of the study shows that a long-run relationship exists between money market and economic growth in Nigeria. The ratio of broad money supply to GDP has a negative and significant impact on economic growth both in the short-run and in the long-run. This shows that an increase in the ratio of broad money supply would decrease economic growth. The graphical illustration also showed absence of positive relationship between the ratio of broad money supply to GDP (M2GDP) and economic growth.

It was also discovered that a positive relationship exists between the ratio of private sector credit to GDP and economic growth but the relationship is however not statistically significant both in the short-run and in the long-run. The reason for the insignificant nature of the ratio of private sector credit to GDP may be due to the unattractiveness of loans to investors and entrepreneurs as well as lack of financial confidence in most of the deposit banks.

The study also found out that real interest rate has a positive and significant impact on economic growth. This implies that an increase (decrease) in real interest rate will increase (decrease) economic growth in Nigeria. The finding also implies that the behavior of interest rate is important for economic growth in view of the relationships between interest rates and investment on the one hand, and between investment and growth on the other hand. Thus, the formulation and implementation of financial policies that enhance investment-friendly rate of interest is necessary for promoting economic growth in Nigeria.

Furthermore, the impact of labor growth rate on economic growth in both the short-run and long run is negative and statistically significant. This means that as the labor growth rate increases, economic growth will decrease. Finally, whether short-run or long-run, physical capital has a positive and statistically significant impact on growth. This means that an increase (decrease) in physical capital increases (decreases) economic growth.

Based on the findings of the study, the following recommendations were made. Firstly, there is therefore the need to further strengthen the reforms in the money market to complement the banking sector reforms in 2004 and 2009 in

Nigeria to repose some confidence in prospective investors and entrepreneurs. The present reforms in the money market should be strengthened given that the Nigeria money market has a significant role to play in channeling resources for investment and productive purposes.

Secondly, the appropriate legal framework needs to be put in place for the smooth introduction and operation of existing and new products in the money market. There is therefore the need to further empower the regulatory institutions to enable them check and nip in the bud any perceived or potential irregularity that may arise as a result of the introduction of new products or in the transaction of the existing ones.

Thirdly, the government should put in place appropriate and sound macroeconomic policies (fiscal and monetary) to boost the development of the money market with a view to promoting productive activities and investments. Money market should be established where they do not yet exist and the government should provide prudential regulations of the entire financial market. This is needed to enable the Nigerian money market perform its fundamental roles of providing payment services; matching savers and investors; generating and distributing information; allocating credit efficiently; pricing, pooling and trading risks; and increasing asset liquidity.

VI. CONCLUSION

The study empirically examined the impact of money market on economic growth in Nigeria. A growth model was constructed using the indicators of the money market as the explanatory variables and gross domestic product as a proxy for economic growth. The money market indicators used as explanatory variables in the study include; ratio of broad money supply to GDP, ratio of private sector credit to GDP and real interest rate. The study employed the ordinary least squares method to examine the impact of these variables on economic growth. The study also conducted Johanson's cointegration test to examine the long run relationship between money market and economic growth. To capture the short-run dynamics, Vector Error Correction Model was employed. Time series data for the study covering the period 1980-2012 were sourced from the World Bank Database, Central Bank of Nigeria Statistical Bulletins and Annual Reports and publications.

The study discovered that though a long run relationship exists between money market and economic growth in Nigeria, but the present state of the Nigerian money market does not have significant impact on economic growth. Both the ratios of money supply to GDP and private sector credit to GDP did not show enough evidence to suggest that they have positive and significant impact on economic growth. This shows that the Nigeria money market is not yet developed enough to produce the needed growth that will propel the economy. The link between the money market and the real sector of the economy remains very weak and, thus cannot propel the needed growth in the economy. The graphical illustration also depicts that the Nigerian money market has no significant impact on economic growth. Generally, the

converse to the McKinnon and Shaw hypothesis is obtained in the case of Nigeria.

The policy implications of these findings are that to promote economic growth, policy makers need to focus attention on long run policies to reduce the ratio of broad money supply to GDP, increase the ratio of private sector credit to GDP and influence the economy through changes in real interest rate. There is therefore the need to further reform the money market to complement the recent banking sector reforms with a view to reposing some confidence in prospective investors and entrepreneurs.

REFERENCES

- [1] Adebisi, M.A. (2005). Capital Market Performance and the Nigerian Economic Growth. In: Issues in Money, Finance and Economic Management in Nigeria: Essays In Honour of Professor Obasanmi Olakanpo, Edited by Fakiyesi, O & O Akano (eds.), University of Lagos Press, Section 1, Chapter 5, Pp 146- 176.
- [2] Adeoye, B.W (2007) Financial Sector Development and Economic Growth: The Nigerian Experience. Paper presented at the Nigerian Economic Society 2007 Annual Conference, Ibadan.pp.43-70.
- [3] Agha, A. I., Ahmed, N., Mubarak, Y. A. & Shah, H. (2005). Transmission Mechanism of Monetary Policy in Pakistan. SBP Research Bulletin, 1(2), pp.1-10.
- [4] Ajakaiye, Olu (2002). Banking Sector Reforms and Economic Performance in Nigeria. In Howard Stein, Olu Ajakaiye and Peter Lewis (Ed) (2002) Deregulation and Banking Crisis in Nigeria: A Comparative Study (Palgrave, New York) Chapter 5. Pp. 20-40.
- [5] Anyanwu, J.C (1996) Monetary Economics. Lagos, Heinemann Educational Books (Nigeria) Plc. 247-274.
- [6] Atje, R and Jovanovic, B. (1993) Stock market and Development: European Economic Review 37: 632-640.
- [7] Dabwor, T. D. (2009). The Nigerian Banking System and the Challenges of Financial Intermediation in the Twenty First Century. Jos Journal of Economics, Vol.4, No.1 Pp.93-108.
- [8] Ebhodaghe, J.U. (1996) Competition and Consolidation in the Nigerian Banking sector: A Regulator's perspective. Paper presented at the 1996 Budget Seminar organized by the Arthur Anderson, Lagos. PP.1-10.
- [9] Ekpo, H.A (2008) The Nigerian Economy: Is it at the Crossroads? Presidential address delivered in Nigerian Economic Society, Abuja. Pp.1-10.
- [10] Gelbard, E, &Leite, P. S. (1999). Measuring Financial Development in Sub-Saharan Africa. IMF Working Paper, 99(105), Pp.1-28.
- [11] Greenwood, J. and Jovanovic, B. (1990) Financial Development Growth and the Distribution of Income: Journal of Political Economy, 98, pp.1076-1107.
- [12] Grossman, G and Helpman, E. (1991). Quality Ladders in the theory of growth. Review of Economic Studies, 58, 43-61.
- [13] Goldsmith, R. W. (1969) Financial Structure and Development. New Haven, Conn Yale University Press Pp.1-30.
- [14] Igbatayo, S. (2011) The Challenges of the Global Economic Crises and Nigeria's Financial Markets Stability. Journal of Emerging Trends in Economics and Management Sciences (JETEMS) 2(6), pp.497-503.
- [15] Khan, M. S. & Senhadji, A. S. & Smith, Bruce D., (2006). Inflation and Financial Depth, Macroeconomic Dynamics, Cambridge University Press, 10(02), Pp 165-182.
- [16] King, R.G and Levine, R. (1992) Finance and Growth, Schumpeter might be right. Quarterly Journal of Economics, 108(3), pp.717-737.
- [17] Levine, R. (1996) "Financial Development and Economic Growth: Views and Agenda." Journal of Economic Literature 35: 688-726.
- [18] Levine, R (1999). Law, Finance, and Economic Growth. Journal of Financial Intermediation 8 (1-2): 8-35.
- [19] Levine, R. (2004) "Bank-based or Market-based Financial Systems: Which is better?" Journal of Financial Intermediation 11 (4): 398-428.
- [20] Levine, R. and Zervos, S. (1996) Financial Development and Economic Growth Views and Agenda. Journal of Economic Literature 35, 688-726
- [21] Lucas, R.E (1988) On the Mechanics of Economic Development; Journal of monetary Economics, 22, pp.3-42.
- [22] McKinnon, R.I (1973) Money and Capital in Economic Development; Washington D.C. The Bookings institution. Pp.1-20.

- [23] Mordi C.N.O. (2010). The Link between the Financial (Banking) Sector and the Real Economy. Central Bank of Nigeria. Economic and Financial Review, 48(4) PP.9-24.
- [24] Nwosu, C P and Hamman, H. M (2008). The Nigerian Money Market: Issues and Challenges: Bullion, Publication of the Central Bank of Nigeria, 32(2), pp. 51-66.
- [25] Obstfeld, M. (1995) Risk Diversification and Growth; the America Economic Review 84(5), pp. 1310-1329.
- [26] Omoruyi, S.E (1991) The Financial sector in Africa Overview and Reforms in Economic Adjustment Programmes.CBN Economic and Financial Review, 29(2), Pp.110-124.
- [27] Onwioduokit, E. (2007). Financial Sector Development and Economic Growth in Nigeria. Paper presented at the Nigerian Economic Society, PP.71-96.
- [28] Onwioduokit, E and Adamu, P. (2005). Financial Liberalization in Nigeria: An Assessment of Relative Impact; Paper presented at the Nigerian Economic Society, Pp 20-37.
- [29] Romer, P.M. (1986) Increasing Returns and Long-Run Growth. Journal of political Economy, 94(5) pp. 1002-37.
- [30] Saibu, M. O., Wakeel, A. I. & Nwosu, P. I. (2009). Energy Prices and Macroeconomic Performance. Pp.1-10.
- [31] Schoar, A. (2009). Lin Roundtable: Scale Matters. Free Exchange, Economist.com blogs Available: http://www.economist.com/blogs/freeexchange/lin_roundtable. http://en.wikipedia.org/wiki/Economy_of_Nigeria_2012.
- [32] Schumpeter, J.A. (1934). The Theory of Economic Development: Cambridge M.A, Harvard University Press. Pp.1-27.
- [33] Senbet, L.W & Otchere, I. (2005). Financial Sector Reforms in Africa: *Perspectives on Issues and Policies*. Annual World Bank Conference on Development Economics (ABCDE), Dakar, Senegal. Pp. 1-61.
- [34] Shan, J. Z. & Morris, A. (2002). Does Financial Development 'Lead Economic Growth? International Review of Applied Economics, 16(2), 153-168.
- [35] Shaw, E. (1973) Financial Deepening in Economic Development: New York, Oxford University press. Pp.1-20.
- [36] Sobodu, O. and Sobodu, A (1999) Effects of stabilization Securities policy on Banking portfolio Behavior in Nigeria, Development Policy Centre Research Paper, Nigeria.Pp.1-10.
- [37] Solow, R. M (1957). A Contribution to the Theory of Economic Growth. Quarterly Journal of Economics, 70, pp. 47-65.
- [38] Soludo, C. (2008) Beyond Banking Sector Consolidation in Nigeria. Paper presented in a Conference in London. Pp.1-20.
- [39] Soyibo, A. Alashi, S O and Ahmad, M.K (1997). The extent and effectiveness of Bank supervision in Nigeria AERC Harere Zimbabwe. Pp.1-23.
- [40] Thoma, M. (2009). Lin Roundtable: Small Banks Need Help. Free Exchange, Economist.com blogs. Available: http://www.economist.com/blogs/freeexchange/lin_roundtable.
- [41] Zingalas, L. (2001). Financial Dependence and Growth. The American Economic.