FINANCIAL DEEPENING AND ECONOMIC PERFORMANCE IN NIGERIA: A BIVARIATE ANALYSIS

BY

Salihu Musa Olalekan
South West Regional Taxpayer Services,
Federal Inland Revenue Service, Ibadan, Nigeria.
Email: iknmusa@yahoo.com; musa.salihu@firs.gov.ng

Olabisi F. Olaniran-Akinyele
Department of General Studies,
Federal Polytechnic, Ilaro, Ogun State, Nigeria.
Email: fatimahakinyele@gmail.com

Oyeleye Temidayo F.
Department of Accountancy,
Federal Polytechnic, Ilaro, Ogun State, Nigeria
Email: oyeleyetemidayo@gmail.com

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Abstract

The paper examined a bivariate analysis of financial deepening and economic performance in Nigeria from 2009-2013. It is cleared from the trend analysis that financial deepening index, investment and economic performance did not experience any dramatic changes during the period. The bivariate analysis outcome indicates that at an average the relationship between Financial deepening and Economic performance is very high, and it suggests that Nigerian financial sector has strong growth potential, if given adequate support and attention. Similarly, the stock market deepening has strong growth potential. The evidence from the correlation matrix shows that Nigerian stock market has a very higher growth potential than the banking sector. The study recommends that government should strengthen the financial market through stable monetary policies.

KEYWORDS: *Financial Deepening, Economic Performance, Bivariate Analysis, Growth Monetary Policy*

Introduction

Disparity in economic performance among countries is a subject that has attracted much attention in recent time. Such that the stagnant growth of output of most countries, specifically the less developed countries is often blamed on "shallow-finance". This makes some economist to conclude that the development of financial markets is a critical part of the development process and that an efficient financial system is linked to economic growth. Hence they regard financial services as the central nervous system of the economy (Crockett, 2000).

The main objective of this paper, therefore, is to examine the trend and nexus between financial deepening and economic performance.

Review of Literature

Theory of Financial Intermediation

In the traditional Arrow-Debreu (1950) model of resource allocation, firms and households interact through markets and financial intermediaries play no role. When markets are perfect and complete, the allocation of resources is Pareto efficient and there is no scope for intermediaries to improve welfare. Moreover, the Modigliani-Miller theorem applied in this context asserts that financial structure does not matter: households can construct portfolios which offset any position taken by an intermediary and intermediation cannot create value (Fama, 1980).

A traditional criticism of this standard market-based theory is that a large number of securities are needed for it to hold except in special cases (Shaw, 1960 and Diamond, 1984). However, the development of continuous time techniques for option pricing models and the extension of these ideas to general equilibrium theory have negated this criticism. Dynamic trading strategies allow markets to be effectively complete even though a limited number of securities exist.

Our understanding of the role or roles played by these intermediaries in the financial sector is found in the many and varied models in the area known as intermediation theory. These theories of intermediation have built on the models of resource allocation based on perfect and complete markets by suggesting that it is frictions such as transaction costs and asymmetric information that are important in understanding intermediation. Gurley and Shaw (1960) and many subsequent authors have stressed the role of transaction costs. For example, fixed costs of asset

evaluation mean that intermediaries have an advantage over individuals because they allow such costs to be shared. Similarly, trading costs mean that intermediaries can more easily be diversified than individuals.

Looking for frictions that relate more to investors' information sets, numerous authors have stressed the role of asymmetric information as an alternative rationalization for the importance of intermediaries. One of the earliest and most cited papers, Leland and Pyle (1977), suggests that an intermediary can signal its informed status by investing its wealth in assets about which it has special knowledge. In another important paper, Diamond (1984) has argued that intermediaries overcome asymmetric information problems by acting as "delegated monitors."

Empirical Literature Review

In one of the early studies on this subject, Goldsmith (1969) analyzed data from thirty-five countries for the period 1860-1963 and found that financial and economic development are positively correlated over periods as long as several decades. Financial development was measured in his study by the ratio of financial intermediary assets divided by gross national product. The result from Goldsmith's study still leaves the puzzle unresolved because each variable has a feedback effect on the other. In an attempt to explain the puzzle, Goldsmith (1969) stresses that financial development largely occurs during the early stages of economic development when countries have low levels of income. This rationale seems to be debunked by the finding of Besci and Wang (1997) who point out that even though financial development occurs and may precede economic growth, it is unclear that it provides causality in an economic sense. Shan, (2001) found that in most of the nine OECD countries and china, financial development did not lead economic growth except for a small number of countries. Recently Shan (2005) analyzed econometrically, ten OECD countries and china, and found that the financial development provided by total credit only exhibit a weak leading effect on economic growth. Chang and Caudill (2005) conduct an econometric study on Taiwan and found that financial development lead economic growth. Indeed, they concluded that the relationship between financial deepening and economic growth is complex and is likely to contain feedback interactions.

Beck and Levine, (2002) observe that economic growth is correlated with the degree of financial development. Their results reveal a strong positive connection between instrumental variables and growth.

In addition, Guiso, Luigi, Paola and Luig (2002) examine individual regions of Italy and find that local financial development enhances the probability that an individual starts a business, increases industrial competition, and promotes the growth of firms.

Beck and Levine (2002) alluded to this finding through the use of different measures of financial development while Wurgler (2000) rationalizes the finding by showing that countries with a higher level of financial development increase investment more in growing industries and decrease investment more in declining industries than financially underdeveloped economies.

Ndebbio (2004), using an ordinary least square regression framework, finds that financial sector development weakly affect per capita growth of output. He attributed the result to shallow finance and the absence of well-functioning capital markets. The findings of Nnanna (2004) was more disturbing. He, also using ordinary least square regression technique, concluded that financial sector development did not significantly affect per capita growth of output. Odeniran and Udeaja (2010) observed that the various measures of financial development granger-cause output even at 1per cent level of significance with the exception of ratio of broad money to GDP. According to Salihu and Bilyaminu (2013) development crisis affecting Nigeria is often anchored on shallow finance and poor investment culture. Financial deepening has been long identified as a vital prerequisite for economic growth but the direction of causality has generated a lot of controversy in literature. Focusing exclusively and critically on financial sector, this study examines the causal relationship between financial deepening and economic growth in Nigeria. Two different measures of financial deepening are used to capture variety of different channels through which financial development can affect growth using descriptive analysis. The results from the analyses show that all the measure of financial deepening have a strong correlation with economic growth.

Data Description and Methodology

The data required for this study include ratio of broad money supply to GDP $(M2Y)$ and ratio of stock market capitalization to GDP $(SMCY)$, ratio of fixed capital formation to GDP

$(INVY)$ as measure of investment and finally the GDP. However in this study, the degree of financial intermediation, which is an important part of financial deepening (FDY), would be the sum of the measures of broad money supply '$M2$'and stock market capitalization 'SMC', thus:

$$FDY = {(M2 + SMC)}/{GDP}$$

The financial deepening based on such an identity is likely to capture situation in Nigeria due to improvement in her capital markets.

Table 1: Summary of Dataset Used

Variables	**Description**	**Unit measured**	**Source**
GDP	Economic growth	Gross Domestic Product per capital at Constant Basic Price	International Monetary Fund (WEO, 2012)
$M2Y$	Broad money supply	Broad Money Supply as a percentage of GDP	Central Bank of Nigeria (statistical Bulletin, 2010)
$SMCY$	Stock market size	Stock market capitalization as a percentage of GDP	Central Bank of Nigeria (statistical Bulletin, 2010)
FDY	Financial deepening	Composite Financial deepening (percent of GDP) (M2+SMC)/GDP	Central Bank of Nigeria (statistical Bulletin, 2010)
$INVY$	Investment	Gross capital formation as a share of GDP	Central Bank of Nigeria (statistical Bulletin, 2010)

Source: Researchers' computation,2015

The study shall explore the following data resources; Gross Domestic product, Broad money supply, Value of Stock Market Capitalization, Fixed capital formation and financial deepening measures in general were obtained from International Monetary Fund world database and Central Bank of Nigeria statistical bulletin (CBN) 2010. The study covered the period of 1981-2010; the choice of this period was governed by data availability.
Thus, for proper analysis the study adopted trend, descriptive and correlation analyses.

Analysis of Result

In order to have a robust and comprehensive result, this study adopts both univariate and Bivariate analysis.

Univariate Analysis

The descriptive statistics below shows the basic characteristics of the series. Financial deepening measured by the composite value of stock market deepening and banking deepening averages 42%. It ranges from 24% and 92% with a standard deviation of 15.62%. This suggests that the Nigeria financial market is coming up as against the old argument that the market is shallow finance.

Table 2: **Descriptive Statistics**

Variables	**Financial Deepening as a percentage of GDP**	**GDP**	**Investment as a percentage of GDP**	**Stock Market Capitalization as a percentage of GDP**	**Money Supply as a percentage of GDP**
Mean	41.99552	46816.71	12.13302	14.25414	27.74138
Median	39.20000	42187.77	9.901775	10.06000	27.80000

Maximum	92.46000	67427.29	35.21876	64.36000	43.60000
Minimum	24.27000	36583.81	5.458907	5.860000	13.70000
Std. Dev.	15.62859	9067.290	6.982607	12.32519	8.279299
Skewness	1.668989	0.896061	2.135396	2.770412	0.218430
Kurtosis	5.704419	2.516794	7.152151	10.90646	1.968225
Jarque-Bera	22.30098	4.162935	42.87170	112.6321	1.516949
Probability	0.000014	0.124747	0.000000	0.000000	0.468380

Source: Researchers' Computation, 2015

However, the high average value could not be accepted as an indication of serious development in the market given the huge standard deviation. Individually the size of stock market measured by ratio of market capitalization to GDP averages 14% and varies from 6% to 64% with high standard deviation of 12% confirming that the market is highly volatile. The ratio of broad money supply to GDP has a mean value of 28%. It ranges between 14% and 44% with standard deviation of 8%. This confirms the assertion that the Nigerian banking sector is more deepened than her stock market.

GDP per capital has a mean value of N46816.71 that varies from minimum of N 36583.81 to maximum N 67427.29 with a very high standard deviation. Investment average 12% that ranges between 35% and 5% with a standard deviation of 7%. The high variation in the series values over the sample period suggest that Nigerian economy is characterized with multiples of instability.

As highlighted in the table, all the series are positively skewed by pointing out an asymmetrical right-tailed distribution. The excess kurtosis estimate of stock market deepening or size measured by ratio market capitalization to GDP, implies that its distribution has fat tails, *leptokurtic*, relative to the normal distribution. Furthermore, the significant Jarque-Bera statistics

of composite financial deepening, stock market deepening and investment indicate a departure from normality through rejecting the hypothesis of symmetric distribution.

Trend analysis

The graphical illustration below shows that GDP per capital initially fell in 1982 but peak up in 1985 to reach its lowest point of N36,583.81 in 1987.

Per Capital Gross Domestic Product

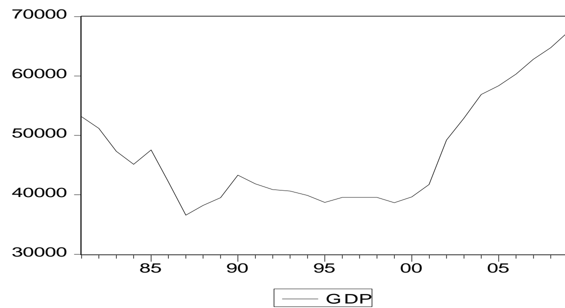

Figure 1

The oscillations continue moderately before trending upward from 2001. Thus despite the 1986 reforms, Nigeria economic growth rate has not been impressive. The trend moved sluggishly upward throughout the sample period.

Investment

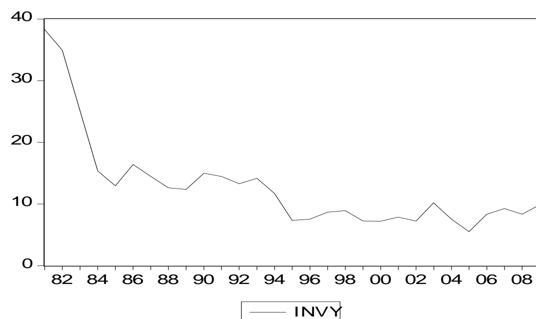

Figure 2

In case of investment, the trend has been negative over the sample period. This probably affects all sector of Nigerian economy that contributed to the slower economic growth. Furthermore, the trend in figure 3 below is an indication that financial deepening is characterized with series of

instability; however it later increases sharply within 2005 and 2007 before a downward movement in 2008.

Financial Deepening

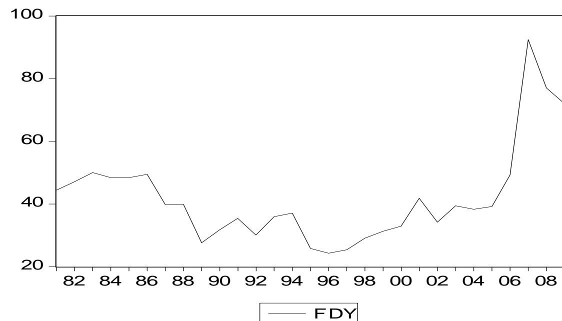

Figure 3

The trends above clearly show that the financial deepening index (comprising ratio of M2 to GDP and share of stock market capitalization to GDP), investment and economic growth did not experience any dramatic change during the period. Despite the various reforms introduced from 1986, which should have a positive effect on financial deepening in Nigeria. Although the number of financial institutions especially banks, increased following the Structural Adjustment Programme of 1986, over time, these institutions could not sustain a high level of intermediation in the system. The presence of weak and terminally distressed banks especially in the 1990s up to 2004 slow down the activities of the Nigeria stock market that further accounted for the low level of financial deepening index during the period: This necessitated the banking consolidation reforms introduced in 2004/2005.

In summary, from the graphical analysis above it is evident that there is relatively low level of the financial market deepening in Nigeria during the period of study. However, the level of financial deepening has been faintly enhanced just after major reforms in the financial system. It is also important to note that the reforms and policy thrusts could have impacted more positively on the system if the issue of systemic crisis most especially in the banking sector had reduced considerably.

Bivariate Analysis

From the table below, the correlation matrix which states the degree of association between variables of interest suggests that at an average the relationship between Financial deepening (FDY) and GDP per capital is positive 76%, this is very high, and it suggest that Nigerian financial sector has strong growth potential, if given adequate support and attention. Similarly, the stock market deepening has strong growth potential. The evidence from the correlation matrix shows that Nigerian stock market has a very higher growth potential than the banking sector.

Table 3: **Correlation Matrix**

Variables	**Financial Deepening as a percentage of GDP**	**GDP**	**Investment as a percentage of GDP**	**Stock Market Capitalization as a percentage of GDP**	**Money Supply as a percentage of GDP**
Financial Deepening as a percentage of GDP	1.000000	0.764532	0.097953	0.850398	0.621704
GDP	0.764532	1.000000	0.024402	0.769831	0.297156
Investment as a percentage of GDP	0.097953	0.024402	1.000000	-0.221932	0.515288
Stock Market Capitalization as a percentage of GDP	0.850398	0.769831	-0.221932	1.000000	0.116596
Money Supply as a	0.621704	0.297156	0.515288	0.116596	1.000000

percentage of GDP					

Source: Researchers' computation, 2015

However, it is only ratio of broad money supply to GDP that has the strongest positive relationship with Investment at 52%, suggesting that the main source of financial intermediation in Nigeria is the Banking sector. The negative correlation with investment exhibited by stock market variable suggests that the sector has a weak support for investment in the country. It may also indicate weak confidence of investors on the Nigerian Stock Market. Thus, one of the objectives of the study is captured by this table, and it suggests that there is strong positive association between financial deepening and economic growth. But it exhibits a weak association with investment.

Conclusion

Although the relationship between financial deepening and economic performance is strong, the financial institutions could not sustain a high level of intermediation in the system.

There is relatively a low level of deepening of the financial market in Nigeria during the period of the study. However, the level of financial deepening has been faintly enhanced just after major reforms in the financial system. It is also important to note that systemic crisis hindered the positive effect of financial sector reforms and policy thrusts. This is despite the various reforms introduced from 1986 which should have a positive effect on financial deepening in Nigeria. In the light of the above, it recommended that Nigerian government should strengthening the financial market through stable monetary policy on interest rate; Reduce government involvement in credit allocation; And Policy makers should encourage stock market development.

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