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The Effect of Financial Deepening on Economic Growth in Nigeria

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Abstract

This study investigated the effect of financial deepening on economic growth in Nigeria. The study covered the period of 1986 to 2019 and data were sourced from Central Bank of Nigeria Statistical Bulletin (2019). Data were analyzed, Johansen Co-integration test, two-stage least squares and Pairwise Granger Causality techniques. Based on findings, long run relationship was discovered between financial deepening indices and economic growth. It was also established that money supply and market capitalization as a percentage of gross domestic product had positive and significant effect on economic growth. Liquidity ratio was also established to have insignificant effect on real gross domestic product while total savings as a percentage of gross domestic product and inflation rate had negative and significant effect on real gross domestic product. The study concludes that, financial depending contributed positively and significantly to Nigerian economic growth. It was recommended that, money supply should be increase in line with the structure of the economy in order to improve the level of economic activities and hence economic growth and more efforts and policies should be initiated to further develop the Nigerian capital market.

Keywords: Financial deepening, economic growth, liberalization, financial market.

1. Introduction

Diverse policy reforms and strategies have been adopted by countries to develop and reengineer financial system in promoting economic growth and development. An important strategy being adopted in the recent years is to deepen the financial system. This is because a deepen financial system would in the long run promote financial intermediation efficiency among different economic agents in the economy (Nwajiaku, Ananwude& Obi-Nwosu, 2020). The deepening of the financial system enables financial institutions to perform their intermediation function effectively and efficiently through supply of modern financial instruments and other services. Rahman and Mustafa (2015); Nwakobi, Oleka and Ananwunde (2019) opined that, financial deepening as a financial development strategy that has the capacity to fast-track the expansion and contributions of financial institutions and markets to economic growth.

Theoretically, the connection between financial deepening and economic growth is base on notion that a developed financial system creates modern financial assets and instruments which supports efficiency in intermediation process. The theory of McKinnon-Shaw (1973) suggested that a freely operating and deepen financial system has the capacity to promote growth and development. Kirkpatrick (2000) also suggested that, there is positive linkage between financial deepening and economic growth. Based on this theoretically proposition, regulatory authority in the Nigeria financial system has adopted diverse policies to deepen the financial system especially since 1986 (Samuel-Hope, Ehimare & Osuma, 2020). However, there is still indications of underwhelming performance of the financial system in Nigeria (Godfrey &Agwu, 2020). It is believed that the Nigerian financial system is yet to fully mobilized the savings capacity of the country for real sector and overall sector growth. This study is thus conducted to investigate the effect of financial deepening on economic growth of Nigeria.

2. Literature Review

2.1 Financial Deepening and Economic Growth

Financial deepening is the ability of financial institutions to ensure effective intermediation of funds, enhance payment mechanism and facilitate financial transactions among economic agents and promote growth in the economy (Akinmulegun & Akinde, 2019). According to Efanga, Ogochukwu and Ugwuanyi (2020), financial deepening involves the capacity of financial institutions to increase the supply of financial assets which will aid the mobilization of large idle funds and allocate them to productive sector.

In the same vein, economic growth measures the improvement of an economy in term of productivity. Economic growth involves the quantitative improvement in the productive capacity and real output of an economy. The common measure of economic growth is gross domestic product which is the monetary value of goods and services that are produced in an economy during a fiscal year (Nwafor & Aremu, 2017). For a nation to achieve growth and development, financial institutions must be able to pool large volume of funds and channel them to the productive sector effectively. However, the ability of financial institutions to efficiently intermediate financial resources in the economy is determined by the level of depth and deepness of financial system (Kolawole, Ijaiya, Sanni & Aina, 2019). Kolawole, *et al.,* (2019) stated further that financial deepening promotes investment, created employment opportunities, raise standard of living and achieve higher productivity and growth through financial markets expansion and innovative financial instruments which give easy access to financial services. While financial deepening spur growth, economic growth also has played significant role in the development process of the financial sector (Ghildiyal, Pokhriyal & Mohan, 2015; Rahman & Mustafa, 2015).

2.2 Theoretical Review

Theoretically, financial deepening is rooted the hypothesis of McKinnon's and Shaw (1973). The McKinnon's and Shaw (1973) theory is based on financial liberalization hypothesis which proposes free market system in the financial sector. The theory suggested that a highly regulated financial market would constraint financial sector development through increase in lending rate and fall in savings rate. This is believed to discourage savings and affects the investment process of an economy in a negative manner. The theory cautions against over regulation of the financial system and suggested a more liberalized policies as a way of enhancing financial sector development and economic growth. According to the Shaw (1973), financial repression restrict efficiency in financial intermediation as a result of this, investors rely on credit from informal financial sector resort to informal credit market. Financial liberalization ease financial intermediation and taxation thereby reducing capital flight of savings from a domestic economy (Petkovski & Kjosevski, 2014). Financial deepening ensures that interest rates reflect opportunities for substitution of investment for current consumption with preference for long term investment.

2.3 Empirical Review

In developed countries, Khalil (2014) studied the effect of financial development on economic growth from 1973 to 2012. Generalized Method of Moments dynamic panel was use to analyze data and it was established that financial development had significant and negative effect on economic growth developed country. Petkovski and Kjosevski (2014) studied the relationship between banking sector deepening and economic growth in Central and South Eastern Europe, it was found based on generalized method of moments (GMM) dynamic panel result that financial deepening negatively influence economic growth while the ratio of quasi money is positively related to economic growth. Darrat (2016) adopted error correction technique to analyze the relationship between financial deepening and economic growth in Saudi Arabia, Turkey and the United Arabs Emirates. It was found that financial deepening had positive and significant effect on economic growth.Yildiz and Atasaygin (2015) assessed the relationship between financial deepening and economic growth in the Turkish economy for the period from 1984 to 2014 and it was found financial development spurred economic growth. Herman and Klemm (2019) examined financial deepening effects in Mexico from 2007 to 2015 through disequilibrium regression approach. The study discovered that supply influences are specifically vital in determining Mexican loans.

In developing countries, Odiambo (2004) investigated the role of financial development on economic growth in South Africa. Data were analyzed with Johansen-Juselius co-integration approach and vector error correction model and it revealed supply leading hypothesis did not hold in South Africa. In Morocco, Fatima (2014) looked at the directional of causality between financial deepening and economic growth from 1990 to 2000. Using the granger causality test, the study found significant short - run relationship between financial deepening and economic growth. Ndebbio (2014) studied the linkage between financial deepening and economic growth in sub-Saharan African countries analyzed with panel regression. The study found positive and statistically significant impact of real money balances on real per capital GDP growth.Ghildiyal*et al.*, (2015) investigated the impact of financial deepening on economic growth in India using Autoregressive Distributed Lag Bound testing approach and Granger Error Correction Model technique. It was found that financial deepening causes economic growth in the long run and also in the short run. Agbelenko (2015) found that financial development positively and significantly influenced economic growth in Togo.

In Nigeria, Mathew and Joseph (2015) assessed the relationship between financial deepening and economic growth in Nigeria. The regression result revealed that financial deepening significantly influences economic growth. Also, Nwanna and Chiwundu (2016) discovered that financial deepening had positive and significant effect on economic growth in Nigeria between 1985 and 2014. Karimo and Ogbonna (2017) also found that the Nigerian financial system is based on supply-leading hypothesis and financial development promote economic growth. Kolawole, *et al.*, (2019) examined the impact of financial deepening on economic growth in Nigeria. Error correction model was use to analyze data and it was revealed that banking sector and capital market related financial deepening variables had significant effect on economic growth in Nigeria. Nwaolisa and Cyril (2019) examined effects of financial deepening on Nigerian economy from 1990 to 2016 using ordinary least square (OLS). Financial deepening was found to positively affect Nigeria's economic growth.

Ohiomu and Oligbi (2020) examined the influence of financial sector development, financial deepening on economic growth in Nigeria from 1981 to 2018. The study used ARDL model for the analysis for robust policy recommendations. The results showed that the financial sector development indicators had long run and positive relationship with economic growth. Samuel-Hope, *et al.*, (2020) explored the effect of financial deepening on Nigeria's growth from 1981 to 2018. It was analyzed using Autoregressive Distributed Lag. From the result of analysis, it was found out that credit to the private sector to GDP was inversely related to GDP growth whereas, money supply to GDP had positive relations with economic growth rate, time and savings deposits in commercial banks negatively affected national growth. Efanga, *et al.*, (2020) investigated the impact of financial deepening on the Nigerian economy between 1981 and 2018 analyzed with co-integration test and Fully Modified Least Squares (FMOLS) Model. It was revealed that financial deepening had positive impact on the Nigerian economy

3. Data and Methods

This study relied on *ex post facto* research design to investigate the effect of financial deepening on economic growth in Nigeria. However, the study is based on time series data which covered the periods of 1986 to 2019. During this periods, diverse reforms like financial liberalization of

1986 and consolidation of 2004 were implemented to deepen and develop the Nigerian financial system.

3.1 Model Design

The model for this study is anchored on the theoretical foundation of Shaw-McKinnon (1973) which proposes that the development of financial sector through free market system would promote financial deepening and hence economic growth. The theory cautions against over regulation of the financial system and suggested a more liberalized policies as a way of enhancing financial sector development and economic growth. In line with this, the model for this study is based on the empirical model of Khalil (2014); Rahman and Mustafa (2015); Efanga, *et al.,* (2020). Therefore, the model for this study is functionally given as:

$$RGDP = f(MS/GDP,\ MCAP/GDP,\ LR,\ TS/GDP,\ INF)$$
$$LRGDP = \beta_o + \alpha_1 MS/GDP + \alpha_2 MCAP/GDP + \alpha_3 LR + \alpha_4 TS/GDP + \alpha_5 INF + \mu$$

Where: LRGDP = Log of Gross Domestic Product. MS/GDP = Money Supply as a percentage of GDP. MCAP/GDP = Market Capitalization as a percentage of GDP. LR = liquidity Ratio. TS/GDP = Total Savings as a percentage of GDP. INF = Inflation Rate. α_o= constant parameter. $\alpha_{1,}$ - α_5 = Parameters. μ = Error term

***A priori* expectation**

Theoretically, it is expected that financial deepening would lead to increasing in savings mobilization and improvement in lending to the real sector with multiplier effects on economic growth. Thus, increase in Money Supply as a percentage of GDP, Market Capitalization as a percentage of GDP and Total Savings as a percentage of GDP will lead to increase in economic growth. However, increase in liquidity ratio is expected to produce negative effect on economic growth as a result of reduction in bank lending capacity.

4. Data Analysis and Discussion of Findings

4.1 Correlation Analysis

The correlation matrix result in Table 1 shows that the independent variables are not perfectly co-liner with the dependent variable which suggests the absence of possible multi co-linearity. The result in Table 1 indicates that money supply as a percentage of gross domestic product, liquidity ratio and inflation rate have weak and negative association with log of real gross domestic product while market capitalization as a percentage of gross domestic product and total savings as a percentage of gross domestic product have with log of real gross domestic product have weak and positive association with log of real gross domestic product.

Table 1: Correlation Matrix

	LRGDP	MSGDP	MCAPGDP	LR	TSGDP	INF
LRGDP	1.000000					
MSGDP	-0.097153	1.000000				
MCAPGDP	0.163202	0.682505	1.000000			
LR	-0.076843	0.239515	0.190260	1.000000		
TSGDP	0.112121	0.755389	0.642171	-0.003831	1.000000	
INF	-0.289821	-0.290639	-0.463553	-0.274852	-0.248604	1.000000

Source: Author's Computation (2021)

4.2 Test of Stationarity

The results in Table 2 shows the outcome of the unit root test at level and it indicates that the entire variables, log of real gross domestic product, money supply as a percentage of gross domestic product, capitalization as a percentage of gross domestic product, liquidity ratio, total savings as a percentage of gross domestic product and inflation rate are not stationary at level because their respective probability values are insignificant at 5%. Thus, the null hypothesis of unit root is accepted for all the variables thereby leading to further test at first difference, that is. I(1). However, Table 2 indicates that the variables are stationary at first difference since their respective probability values are significant at 5%.

Table 2: Analysis of Unit Root at Level

Variables	ADF Test Statistic	Prob.	ADF Test Statistic	Prob.	Order of Integration
LRGDP	-0.790035	0.8084	-3.140583	0.0335	I(1)
MSGDP	-0.583696	0.8610	-5.494051	0.0001	I(1)
MCAPGDP	-1.938688	0.3113	-6.357740	0.0000	I(1)
LR	-0.880883	0.7817	-4.121126	0.0031	I(1)
TSGDP	-2.112621	0.2412	-6.179119	0.0000	I(1)
INF	-2.568808	0.1095	-4.850999	0.0005	I(1)

Source: Author's Computation (2021)

4.3 Co-Integration Result

Table 3 presents the result of the Johansen co-integration test for the study to determine the long run relationship between financial deepening and economic growth in Nigeria. Based on the result reported in Table 3, both the Trace and Maximum Eigenvalue statistics show there is two co-integrating vector in the model which implies that financial deepening has long run relationship with economic growth. The implication of this is that, financial deepening has the capacity to influence movement of economic growth in the long run in Nigeria.

Table 3: Summary of Trace and Maximum Eigenvalue

Unrestricted Cointegration Rank Test (Trace)				(Maximum Eigenvalue)		
Hypothesized No. of CE(s)	**Trace Statistic**	**0.05 Crit. Value**	**Prob.***	**Max-Eigen Statistic**	**0.05 Crit. Value**	**Prob.***
None *	145.1208	95.75366	0.0000	58.69303	40.07757	0.0002**
At most 1 *	86.42772	69.81889	0.0014	41.41277	33.87687	0.0052**
At most 2	45.01496	47.85613	0.0902	18.57961	27.58434	0.4477
At most 3	26.43535	29.79707	0.1162	16.89657	21.13162	0.1769
At most 4	9.538775	15.49471	0.3179	7.110279	14.26460	0.4762
At most 5	2.428496	3.841466	0.1191	2.428496	3.841466	0.1191

Source: Author's Computation (2021)

4.4 Financial Deepening and Economic growth

The result in Table 4 reports the effects of financial deepening indices on economic growth using two-stage least squares regression. The value of the Adjusted R-Squared is pegged at 0.901782 indicating that 90% movement in log of real gross domestic product is explained by money supply as a percentage of gross domestic product, capitalization as a percentage of gross domestic product, liquidity ratio, total savings as a percentage of gross domestic product and inflation rate. Also, the F-statistic value is given as 61.59749 with a probability value of 0.0000 which implies that financial deepening has significant effect on economic growth.

The result shows that money supply as a percentage of gross domestic product has a coefficient of 0.080541 which implies that 1% increase in money supply as a percentage of gross domestic product will lead to 0.08% increase in real gross domestic product. This conforms with the study of Godfrey and Agwu (2020); Nwakobi, *et al.,* (2019). The implication of this is that increase in financial deepening through money supply will lead to improvement in economic activities and hence positive contribution to economic growth.

Also, capitalization as a percentage of gross domestic product has positive and significant effect on log of real gross domestic product with a coefficient of 0.019993 suggesting that 1% increase in capitalization as a percentage of gross domestic product will bring 0.02% increase in real gross domestic product. This result corporate with the findings of Kolawole, *et al.* ,(2019); Efanga, *et al.,* (2020). The implication of this is that, the deepening of the Nigerian capital would promote long term intermediation of financial resources which will enhance investments and economic growth.

Liquidity ratio is also established to have positive but insignificant effect on log of real gross domestic product with a coefficient of 0.000171 which suggests that 1% increase in liquidity ratio will lead to increase in real gross domestic product. The result further shows that total savings as a percentage of gross domestic product has negative and significant effect on log of real gross domestic product with a coefficient of -0.024425 which implies that 1% increase in total savings as a percentage of gross domestic product will lead to 0.024% fall in real gross domestic product. which is contrary with the findings of Ohiomu and Oligbi (2020). The implication of this is that, inadequate mobilization of funds by the banking sector will discourage investment due to lack of funds for lending which will reduce economic growth. Finally, the result reveals that inflation rate has negative and significant effect on log of real gross domestic product with a coefficient of -0.003734 which indicates that increase in inflation rate will lead to fall in real gross domestic product.

Table 4: Two-Stage Least Square

Dependent Variable: LRGDP				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
MSGDP	0.080541	0.008977	8.971585	0.0000
MCAPGDP	0.019993	0.006876	2.907522	0.0071
LR	0.000171	0.001568	0.108901	0.9141
TSGDP	-0.024425	0.010577	-2.309320	0.0285
INF	-0.003734	0.001443	-2.587315	0.0152
C	9.175243	0.103890	88.31732	0.0000
R-squared	0.916664			
Adjusted R-squared	0.901782			
F-statistic	61.59749			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	1.713389			

Source: Author's Computation (2021)

5.0 Conclusion and Recommendations

Government policies over the years have been tailored towards the growth and development of an economy. Financial system development however forms one of the major policies to improve the economy due to the significant role financial system in the growth process of an economy. To this effects, policy frameworks of the government is to promote deepening and expansion of the financial system. Therefore, this study examined the effect of financial deepening on economic growth in Nigeria. The study established that, financial deepening spurred economic growth in Nigeria through money supply, capital market development and liquid banking sector. These findings are supported by the theoretical underpinning of Shaw-McKinnon (1973) which stressed the role of financial sector development and deepening in the growth process of an economy. The study concluded based on findings that, financial deepening contributed positively and significantly to Nigerian economic growth. It was thus suggested that, monetary authority should increase money supply in the economy in order to improve the level of economic activities and hence economic growth. However, this should be done with cautious to avoid the problem of inflation rate in the economy. More efforts and policies should be initiated to further developed the Nigerian capital market. This is due to the little effect of market capitalization on economic growth. More financial instruments and technologies should be introduced in the market to further attract investors.

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