Financial Deepening of Market Capitalization and Economic Development in Nigeria

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Abstract
The research work examined the effect of financial deepening on the Nigerian economic growth. Specifically, the study assessed the relationship between market capitalization and economic development proxied by per capita income period from 1999-2022. Ex-post facto research design was the adopted research design for this study. Data were extracted from the CBN annual reports and statistical bulletin. Hypotheses were tested using ordinary least square (OLS) regression techniques. The study found among other things that revealed that there is a significant and positive relationship between market capitalization and economic development in Nigeria. Based on the findings, the study recommend that it is pertinent that government should design policies aimed at developing the financial sector so as to make private credit accessible to investors as this will boost private sector development and facilitates domestic investors which is one of the engine of growth and Nigerian capital market should be well regulated to ensure that public trust is sustained to ensure that the fund obtained from the capital market is sustained.

Keywords: *Financial deepening, Market capitalization and Economic development*

Introduction

The question of whether financial deepening promotes economic development has been a subject of great interest and debate for many years. Traditionally, the debate has revolved around whether deepening the financial system results in a higher rate of economic development. A large body of literature has emerged, both at the theoretical and empirical level, attempting to address this question.

Economic development in a developing economy rest on efficient financial sector that pools domestic saving and mobilizes foreign capital for productive investments. In developing countries, industries need more funds to increase their investment so that they can meet globalization constraint and to satisfy their increasing customer base. According to Nwakpa (2022), the term economic development has been used frequently in the 20th and 21st centuries, but the concept has existed in the West for far longer. "Modernization", "Westernization", and especially "industrialization" are other terms often used while discussing economic development. Historically, economic development policies focused on industrialization and infrastructure;

since the 1960s, it has increasingly focused on poverty reduction. Economic development is a policy intervention aiming to improve the well-being of people, whereas economic growth is a phenomenon of market productivity and increases in GDP; Nwakpa (2022) describes economic growth as but "one aspect of the process of economic development".

Economists primarily focus on the growth aspect and the economy at large whereas researchers of community economic development concern themselves conditions increased with socioeconomic development as well. Financial deepening is to improve economic conditions through increased competitive efficiency within financial markets thereby indirectly benefiting non-financial sectors of the economy. Financial deepening also helps in increasing the provision and choices of financial services which would come through its financial infrastructure. Nzotta and Okereke (2019) posited that financial deepening is the ability of financial institutions in an economy to effectively provide wider range of financial services for different socioeconomic groups. Financial deepening vigorously attracts the reservoir of savings and idle funds and allocates same to entrepreneurs, business, households and government for investments projects and other purposes with a view of returns which forms the basis for economic development (Ndebbio, 2019).

Several studies with mixed results have been conducted across countries to investigate the relationship between financial deepening and economic development. Some studies have used developed and developing cross-countries data sets (King and Levine, 2019). Other studies have used a sub-regional African approach (Nguena and Abimbola, 2018; Ndebbio, 2019). In individual African countries context such as South Africa (Jail, Wahid and Shahbaz, 2020); Nigeria (Onwumere, Ibe, Ozoh and Mounanu, 2018; Nzotta, 2019) findings suggested mixed results depending on financial deepening indicators employed. Also, this study focuses on filling methodological gap, as most of the studies reviewed were using co-integration and granger causality test. This study simply adopts ordinary least square regression method in its analysis to know if the same result will be ascertained. This study therefore sought to assess the effect of market capitalization on economic development in Nigeria.

Conceptual Review

Financial deepening generally entails an increased ratio of money supply to gross domestic product (Nzotta, 2019). The more liquid money is available to an economy, the more opportunities exist for continued growth of the economy. The level of financial deepening reflects the soundness of the financial sector and the ability with which credits are created with respect to lending and deposit rates. According to Nwaogwugwu (2018), Financial deepening refers to the increased provision of financial services with a wider choice of services geared towards the development of all levels of society. The World Bank (2020) further contends that financial deepening encompasses the increase in the stock of financial assets. From this perspective, financial deepening implies the ability of financial institutions in general, to effectively mobilize financial resources for development. This view accepts the fact that a financial system's contribution to the economy depends on the quality and quantity of its services and the efficiency with which it performs them.

Financial deepening broaden access to finance and increase the efficiency of capital allocation,

encourage saving. By targeting financial market imperfections such as asymmetric information and cost associated with transactions and contract enforcement and creating enabling conditions for financial markets and instruments for growth. Levine (2017) notes that by facilitating investment and making it more profitable, market liquidity improves the allocation of capital and enhances prospect for long run economic growth. Financial deepening can also lead to greater efficiency of financial intermediation (e.g. via intermediation of greater amounts of domestic savings and investment cycles) and thereby greater stability. The diversified funding base of financial institutions has played a role in cushioning the impact of a global credit (wholesale funding) crunch on domestic financial intermediation (Nwakpa, 2022).

The size of the financial sector is usually measured by two basic quantitative indicators: "monetization ratio" and "intermediation ratio". Whereas monetization ratio includes money-based indicators like money supply ratio to gross domestic product, intermediation ratio consists of indicators concerning to bank-based measures like private sector credit ratio to gross domestic product and capital market-based measures such as market capitalization ratio to gross domestic product (Ndebbio, 2019).

According to Ndebbio (2019), economic growth and development of a country depends greatly on the role of financial deepening. He argued what is important is what constitutes the financial assets that wealth-holders must have as a result of high per capita income. It is only when we can identify those financial assets can we be able to approximate financial deepening adequately. In short, and for our purpose, financial deepening simply means an increase in the supply of financial assets in the economy.

Stock Market and Economic Development

The finance led theory postulate that financial deepening can enhance economic development. The question arises as to what kind of financial deepening measures are most appropriate, bank based or stock market. Empirical literature on the impact of financial deepening on economic development has mainly use bank based measures of financial deepening (Agu & Chukwu, 2018; Nzotta & Okereke, 2019; Victor & Samuel, 2018). Stulz (2020) argued that banks are superior to stock markets as a means of enhancing economic growth. He indicated that banks offer an alternative lower cost of capital to firms which they may not obtain from the stock market. Cameron (2017) concluded that a bank based system of finance is a far better system for developing countries. Levine (2017), however, argued that the stock market is better as a means of financing growth, as it provides greater opportunities for competition, thereby encouraging entrepreneurship. Ndebbio (2019) investigated financial deepening, economic growth and development in selected Sub-Saharan African countries. The study found that financial deepening weakly affect per capita growth of output and this was attributed to the absence of well-functioning stock markets. Market capitalization, sometimes referred to as market cap, is the total value of a publicly traded company's outstanding common shares owned by stockholders. Market capitalization is equal to the market price per common share multiplied by the number of common shares outstanding.

In principle, the stock market is expected to accelerate economic growth, by providing a boost to

domestic savings and increasing the quantity and the quality of investment. The market is expected to encourage savings by providing individuals with an additional financial instrument that may better meet their risk preferences and liquidity needs. Better savings mobilization may increase the saving rate. The stock market also provides an avenue for growing companies to raise capital at lower cost. In addition, companies in countries with developed stock market are less dependent on bank financing, which can reduce the risk of a credit crunch.

Economic development is generally agreed to indicate development in an economy, because it transforms a country from a five percent saver to a fifteen percent saver. Thus it is argued that for stock market and bank financing to contribute or impact on the economic development in Nigeria, it must operate efficiently. Most often, where the market operate efficiently, confidence will be generated in the minds of the public and investors will be willing to part with hard earned funds and invest them with the hope that in future they will recoup their investment.(Okoli, 2020).

Levine (2017), argued that bank and stock markets provide financial services which are essential for the development of a country and is of the opinion that the services provided by bank and stock market may be complementary.

Economic growth is a complex, long-run phenomenon, subjected to constraints like: excessive rise of population, limited resources, inadequate infrastructure, inefficient utilization of resources, excessive governmental intervention, institutional and cultural models that make the increase difficult, etc (Hardy, 2021).

Economic growth is obtained by an efficient use of the available resources and by increasing the capacity of production of a country. It facilitates the redistribution of incomes between population and society. The cumulative effects, the small differences of the increase rates, become big for periods of one decade or more. It is easier to redistribute the income in a dynamic, growing society, than in astatic one. There are situations when economic growth is confounded with economic fluctuations. The application of expansionist monetary and tax policies could lead to the elimination of recessionary gaps and to increasing the GDP beyond its potential level. Economic growth supposes the modification of the potential output, due to the modification of the offer of factors (labour and capital) or of the increase of the productivity of factors (output per input unit). When the rate of economic growth is big, the production of goods and services rises and, consequently, unemployment rate decreases, the number of job opportunities rises, as well as the population's standard of life (Quinoz, 2020).

Empirical Review

Shittu (2022) examined the impact of financial intermediation on economic growth in Nigeria with time series data from 1970 to 2020. Employing co integration test and error correction model, he finds that financial intermediation has a significant impact on economic growth in Nigeria. Sulaiman and Azzez (2022) critically explored the effect of financial liberalization on the economic growth in developing nations with its assessment focusing on Nigeria with annual time series data from 1987-2019. The study employs cointegration and error correction model (ECM) by making Gross Domestic Product as a function of lending rate, exchange rate, inflation rate, financial deepening (M2/GDP) and degree of openness as its financial liberalization indices. Co-integration result confirms the existence of long run equilibrium

relationship while the ECM results show a very high R^2 in both the over-parameterized model (95%) and parsimonious model (91%). The study therefore concludes that financial liberalization has a growth-stimulating effect on Nigeria. Jalil, Wahid and Shahbaz (2020) investigated the relationship between development of the financial sector and economic growth. They used time series data for the 1985 -2017 period and set the estimation strategy under the ARDL model. The variables used for financial deepening were liquid liabilities to nominal GDP (M2/GDP), credit to private sector to nominal GDP, Commercial/Central Bank asset ratio. The researchers found a positive monotonic relationship between financial development and economic growth for South Africa, Trade Openness and per capita real capital were found as the other important determinants of economic growth.

Nzotta and Okereke (2019) carried out an empirical study which observed financial deepening and economic development in Nigeria from the year 1986 to year 2017. Their work made use of secondary data obtained for a period of 32 years. They specified nine explanatory variables for their study based on hypothetical substructures. In their work, they sought to establish a relationship between the variables they specified and financial deepening index. They used two stages least square analytical framework in their analysis and also trend analysis was applied in the study. At the end of their study, they observed that financial deepening index is low in Nigeria over the years. They discovered also that the nine explanatory variables, as a whole were useful and had a statistical relationship with financial deepening. They also found out that four of the variables specified in their study; lending rates, financial savings ratio, cheques/GDP ratio and the deposit money banks/GDP ratio had a significant relationship with financial deepening. They concluded that the financial system has not sustained an effective financial intermediation, especially credit allocation and a high level of monetization of the economy which led them to recommend that the regulatory structure should be reorganised to guarantee good risk management, corporate governance and lessening systemic crisis in the system. Adu, Marbuah and Mensah (2019) investigated the long run effect, financial deepening has on the Ghana economy, using a time series data for 14 years period 1998 to 2018. Their study used private sector credit ratio to GDP, money supply ratio to GDP, total domestic credit ratio, total bank liabilities ratio and a set of control variables such as trade openness, inflation rate and real gross government expenditure. The study, although useful in the use of more than one measure of financial deepening and the use of control variables, the number of observation of their data points is insufficient to obtain a statistically significant result for the individual variables. The researcher failed to apprehend the fact that the time span of the study draws into question the validity of the finding, as they could be spurious. Econometric theories suggest a minimum 15 years' time series data as a measure of avoiding spurious result in a study. Ndebbio (2019) studied financial deepening and economic growth: evidence from selected sub-Saharan African countries using the ratio of money supply to GDP and growth rate per capital real money balances as indicators of financial deepening. The study found positive and statistically significant impact on growth rate in per capital real money balances on real per capital GDP growth. Agu and Chukwu (2018) studied financial deepening and economic growth in Nigeria from the period of 1970 to 2015. The study used only bank based financial deepening proxies. Financial deepening means an increase in

asset and providing level of financial services to the economy. The total amount of financial assets will constitute an optimal measure of financial deepening. Bashiru (2018) studied the financial deepening and economic growth in Ghana using quarterly data from 1983 -2018. The Johansen co integration approach, vector error correction, vector autoregressive and Granger causality approaches were employed. Financial deepening was proxies by credit to private sector/GDP and broad money/GDP, interest rate and market capitalization, government spending/GDP while economic growth was measured by real GDP per capita. The results revealed a positive long run relationship between financial deepening as measured by credit to private sector/GDP and economic growth but no long run relationship when financial deepening was measured by broad money/GDP. The study found support for the endogenous growth prediction. However, evidence for the demand–pulling hypothesis was found when financial deepening was proxies by broad money to GDP. The study recommended that the Bank of Ghana could consider enhancing the institutional, legal and regulatory framework to enable financial institutions perform their roles without friction. Agu and Chukwu (2018) studied financial deepening and economic growth in Nigeria from the period of 1970 to 2015. The study used only bank based financial deepening proxies. Financial deepening means an increase in asset and providing level of financial services to the economy. The total amount of financial assets will constitute an optimal measure of financial deepening. Torruam, Chiawa and Abur (2018) investigated the impact of financial deepening on economic growth in Nigeria. The study examines the causal relationship between financial deepening and Economic Growth in Nigeria for the period 1990-2017. The stationarity properties of the data and the order of integration of the data were tested using both the Augmented Dickey-Fuller (ADF) test and the Phillip-Perron (PP) test. The variables tested stationary at first differences. The Johansen approach of cointegration was applied to test for the long-run relationship among the variables. The result indicated four (4) cointegrating relations between the variables; the
Granger-causality suggests that there is unidirectional causality running from economic growth to financial deepening in Nigeria. The study concludes that financial deepening has an impact on economic growth in Nigeria. This implies that developing the financial sector in Nigeria, improves financial structures and ensures efficient delivery of financial services to the private sector to invest to attract more private sector participation for increase output.
Ang (2017) examined to what extent financial development contributed to output expansion during the period 1960 to 2013. Using augmented neoclassical growth framework to provide an evaluation of the impact of financial sector development on economic development and the Autoregressive Distributed Lag Model (ARDL) bounds procedure, the researcher found that aggregate output and its determination are co integrated in the long run, suggesting that financial development whereas the accumulation of public capital appears to curtail output expansion in the long run.
Karimo and Ogbonna (2017) in their work ‘Financial Deepening and Economic development Nexus in Nigeria: Supply Leading or Demand-Following?’ examined the direction of causality between financial deepening and economic development in Nigeria for the period 1970–2013. Their study adopted the Toda–Yamamoto augmented Granger causality test and the results they got showed that the growth-financial deepening nexus in Nigeria follows the supply-leading

hypothesis. This they say means that it is financial deepening that leads to development and not development leading to financial deepening.

Methodology

The study adopts the *Ex Post Facto* research design which is a very common and ideal method in conducting research in business and social sciences. It is mostly used where variables are drawn from already concluded events and there is no possibility of data manipulation.

The data required for this analysis are time series data. In order to facilitate time series analysis, the data will be sourced from the Central bank of Nigeria (CBN) statistical bulletin, Nigerian Stock Exchange (NSE) fact books, published journals, seminars papers, Central bank of Nigeria bullion, unpublished write-up. The data relevant for the study was market capitalization, while per capita income and infrastructural development were used to proxy economic development.

Model Specification

This research work adapts the model of Victor and Samuel (2019) which was used to examine effect of financial deepening on economic development. The model was expressed as:

$GDP = a_0 + a_1M_{2t} + a_2MCAP_t + a_3PSC_t + U_t$----------(1)

The model showed that GDP is a function of money supply, market capitalization and private sector credit.

This study adapted this model with slight modifications. In his model, the researcher expressed development as a function of financial deepening measured by money supply and other set of control variables such as Private sector credit, Market capitalization.

The study use the multivariate model below:

$INFRD = f(M_S + MCAP + PSC)$----------(2)

$PCI = f(MS + MCAP + PSC)$----------(3)

This model represented in a log-linear econometric format to obtain the coefficients of the elasticity of the variables, while reducing the possible impact that any outlier may have thus;

Model 1

$INFRD_t = a_0 + a_1MCAP_t + U_t$……..i

Where:

MCAP = Market Capitalization
INFDR = Infrastructural development
a_0 = constant
a_1 = Coefficient of Independent Variables
U = Error term
t = Time Trend

Method of Data Presentation and Analysis

The result generated from the study is analyzed using both descriptive and analytical techniques. The analytical techniques employed are based from the result of the regression analysis using the ordinary least (OLS) approach. Analysis will be done using economic view(E-view) statistical

package.

Co-efficient of Multiple Determination (R^2)

This measures the goodness of fit of the parameters estimated and also explain the percentage/total variations in the dependent variable (GDPGR) caused by variations in the explanatory variables included in the model. R^2 lies between zero (0) and one (1). Also is the Adjusted R^2 the coefficient of determination adjusted for degrees of freedom associated with the sums of squares entering into the model. Both the R^2 and adjR^2 (adjusted) will be used to evaluate the obtained result.

The F- test

This test the overall significance of the regression model basically. If the F- statistic exceeds the F-critical value, we reject the null hypothesis that the variables are jointly insignificant at the 5% chosen level of significance. Otherwise, we do not reject the null. Again the probability value of the F-statistic may also be used in reaching the same conclusion. If the probability value < 0.05, we reject the null and conclude that the variables of the model are jointly significant.

A Priori Expectation

This refers to the supposed relationship between and or among the dependent or independent variables of the model as determined by the postulations of endogenous theory. Here, the researcher determine whether the variable conforms to expectations or whether there is a deviance. The table below summarizes the a priori expectation of the parameters:

Data Analysis

Table 1: Descriptive Statistics

	Mcap	Infd	Pci
Mean	51105.49	247606.1	51726.61
Median	39542.43	205000.0	31525.18
Maximum	199336.0	410000.0	202365.0
Minimum	489.7700	156000.0	32.6400
Std. Dev.	56362.45	80181.41	58300.91
Skewness	0.965006	0.643586	1.022949
Kurtosis	2.938676	2.052051	2.940179
Jarque-Bera	5.126972	3.513704	5.760258
Probability	0.077036	0.172587	0.056128
Sum	1811881.	8171000.	1739978.
Sum Sq. Dev.	1.02E+11	2.06E+11	1.09E+11
Observations	23	23	23

The descriptive statistic showed that MCAP and INFD were 54905.49 and 247606.1 respectively. The table also showed that INFD had the highest deviation from its mean, while MCAP had the lowest standard deviation.

Stationarity Test Result

Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) test were used to check for stationarity of data to ensure that the variables are from stationarity defect linked with most time series data. The ADF and PP results in Table 4.3 and 4.4 show that all the variables are

stationary at first difference as such; inferences made from analysis will not be spurious.

Table 2: ADF Test Result

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Order of Integration/Remark
MCAP	-3.649944 (0.01)*	-3.679322	-2.967767	1(1)/Stationary
INFD	-3.364737 (0.02)*	-3.752946	-2.998064	1(1)/Stationary

Source: Computer analysis using E-views 9.0

Table 3: PP Test Result

Variables	PP Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Order of Integration/ Remark
MCAP	-3.658280 (0.01)*	-3.679322	-2.967767	1(1)/Stationary
INFD	-4.838775 (0.00)*	-3.679322	-2.967767	1(1)/Stationary

Source: Computer analysis using E-views 9.0

Test of Hypothesis

Table 4: Ordinary Least Square Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.692466	5.016117	3.522086	0.0020
MCAP	0.650221	0.318359	0.551047	0.0011
PSCR	0.634670	4.374939	2.287942	0.0021
R-squared	0.534116	Mean dependent var		4.400000
Adjusted R-squared	0.503647	S.D. dependent var		7.595234
S.E. of regression	7.067605	Akaike info criterion		6.872486
Sum squared resid	7.30E+09	Schwarz criterion		7.059312
Log likelihood	-99.08729	Hannan-Quinn criter.		10.503160
F-statistic	10.14186	Durbin-Watson stat		2.063649
Prob(F-statistic)	0.000122			

Source: Computer output data using E-views 8.0

The coefficients represent the estimated effect of each independent variable on per capita income, holding other variables constant. One-unit increase in market capitalization is associated with an increase of approximately 0.650221 units in per capita income, holding other variables constant. The standard error for MCAP is 0.3 18359, indicating some uncertainty in the estimated effect of market capitalization on per capita income. The R-s quared value is 0.534116, indicating that approximately 53.41% of the variance in per capita income is explained by the independent variables included in the regression model which is statistically significant.
Overall, the P-values of market capitalization and private sector credit were 0.0030 and 0.0011 and were all less than the significance value of 0.05, hence we reject the null hypothesis and accept the alternative that the variables has a positive and significant effect on per capita income in Nigeria.

Discussion and Conclusion

This study examined the effect of financial deepening Nigeria development from 1999 -2022. Following a detailed time series analysis the findings revealed a plausible result on economic development in Nigeria. As revealed from the findings of the study, the regression result showed that indicate that market capitalization has significant effects on per capita income in Nigeria. The regression results show that market capitalization has a positive coefficient, indicating that an increase in market capitalization is associated with higher per capita income. Market capitalization reflects the total value of all listed securities on a stock exchange, and its growth signifies the expansion and attractiveness of the stock market. A robust stock market can attract investment, facilitate capital formation, and stimulate economic activity, ultimately contributing to higher per capita income. It also suggest that an increase in money supply implies greater liquidity in the economy, which can stimulate consumption, investment, and economic growth. As individuals and businesses have more access to credit and capital, they can engage in productive activities that generate income and contribute to higher per capita income levels. Overall, the findings suggest that financial sector indicators such as market capitalization, play crucial roles in shaping economic development and per capita income in Nigeria. These results underscore the importance of a well-functioning financial system that facilitates capital allocation, fosters investment, and supports the growth of businesses and individuals.
This study, in line with the theoretical literature, revealed a positive influence of financial deepening as measured by market capitalization on economic development of Nigeria. In the light of the above and the debate over the finance- development nexus, the findings of this study should not be viewed as conclusive empirical evidence, but rather an additional motivation for further research in the area with regards to the use of indicators of financial deepening.
Based on the findings from the study, the study recommended that there is need to encourage investment in research and development activities to foster innovation and technological advancement. Supporting R&D initiatives in universities, research institutions, and private sector organizations can lead to the development of new products, processes, and technologies that enhance competitiveness and drive value creation in the economy.