

Contribution of Financial Development to Services Sector Growth in Nigeria: Evidence from 1981-2019

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ABSTRACT

This paper explores the relationship between financial development and output of the services sector in Nigeria over the period 1981-2019. It analyzes the long-run and short-run impacts of financial development on the performance growth of the services sector, as well as the cointegration between the variables. We test the time series for stationarity using Phillips-Perron and Augmented Dickey Fuller unit root tests. The Auto-Regressive Distributed Lag (ARDL) approach is deployed to analyze the relationship between financial development and services sector performance in Nigeria. Market capitalization, monetization ratio, and ratio of credit to the private sector to GDP serve as the indicators of financial development. The results of this study show that market capitalization and monetization ratio have significant positive impacts on services sector performance, respectively. However, the effect of credit to the private sector on services sector performance is insignificant and negative. We find no cointegration among the investigated variables; while, the result of the error correction estimation indicates that it takes about two years to restore the long-run equilibrium after a deviation. In light of the findings made, this paper draws a conclusion that financial development exerts a significant positive effect on services sector performance in Nigeria.

KEYWORDS: Services sector, Financial development, Credit to the private sector, Monetization ratio, and Private credit.

1. INTRODUCTION

This paper examines the relationship between financial development and the services sector performance in Nigeria. Several studies on financial sector development and growth nexus maintain the opinion shared by Schumpeter concerning the favourable effect of financial development on output. As argued by Schumpeter, a well-functioning financial sector performs its core targets including savings mobilization, monitoring of managers, facilitation of transactions, efficient distribution of scarce resources among alternative projects, etc. (King & Levine, 1993; Schumpeter, 2011); and by implication stimulates technological innovation and productivity growth.

Several studies have extensively researched on financial development and economic growth nexus, while a greater percentage focused on cross-sectional studies (De Gregorio & Guidotti, 1995; Hermes & Lensink, 2004; Ductor and Grechyna, 2015; Mollaahmetoğlu and Akçalı, 2019; etc.). Some research work in this category covered both developing and developed countries.

Nigeria, an emerging economy in Africa, still wields influence on the continent. Previous studies on financial development in Nigeria concentrated more on the overall economic growth (Bassy& Effiong, 2020; Iheanacho, 2016; Audu&Okumoko, 2013; Hashim, 2011; Madichie, Oguanobi, Maduka, &Ekesiobi, 2014; among others). Given this situation, sectoral analyses become important in the on-going debate to ascertain the level of impact from financial development on identified sectors of the economy in Nigeria.

One of the fastest growing sectors of Nigeria's economy is the services sector. It remains the biggest sector of the economy in terms of contribution to the gross domestic product (GDP) as reported by the Central Bank of Nigeria (CBN) Statistical Bulletin 2019 edition. Our non-exhaustive review of past literature has shown that studies on the services sector as it relates to financial development have not been conducted before. We intend to fill this void by examining the extent to which Nigeria's financial sector development has impacted the services sector. To achieve this purpose, we adopt the most recent data on the variables of interest (with the qualities to produce more realistic empirical results) as reported by the identified source.

The recent data on financial development indicators and the services sector adopted reflect the economic fluctuations and other socio-economic developments that occurred in Nigeria in recent times. Previous studies on the related subjects that used outdated data cannot guarantee this vital feature. This research study is written at the right time given the increasing emphasis on the knowledge economy in our contemporary world. Expectedly, the services sector represents the future of Nigeria's economy, if only the drive for human capital development can be pursued with passion and vigor by both the public and private sectors. The statistics has shown that people below 35 years of age constitute more than half of Nigeria's population. These vibrant and digital-savvy young people propel the robust growth recorded in the fintech industry, a fast-growing arm of the information and communication sub-sector in Nigeria (FinTech Association of Nigeria & EY, 2020).

The services sector in Nigeria is constituted by thirteen major sub-sectors which

include education; trade; accommodation and food services; transportation and storage; information and communication; financial and insurance; arts, entertainment, and recreation; education; real estate, human health and social services; etc. (CBN Statistical Bulletin, 2019). A close look at the growth of the services sector in the past ten years, in terms of its nominal contribution to the gross domestic product (GDP), shows that the sector's volume of *output* grew by 206%. Some sub-sectors are key to the significant growth recorded by the sector. Between the period 2009-2019, the three key sub-sectors that led the growth chart in the services sector are trade, information and communication, and real estate. Information and communication came first with a growth rate of 246% between 2009-2019. The trade segment of the sector rose by 185% within the above reference period; while, the real estate sub-sector increased by 142% within the same period. The information and communication sub-sector still leads the rest of the services sub-sectors in the Nigerian economy largely due to increasing foreign and domestic investments in the sub-sector.

In this study, we intend to demystify the role of financial development, albeit empirically, in promoting the economy of the services sector in Nigeria. This way, we will add to the literature on the relationship between the variables of interest as it affects Nigeria.

II. LITERATURE REVIEW

There is an absence of consensus on the role of financial development in promoting output growth as revealed by the literature review. Several hypotheses abound on financial development and output growth relationship, this research study reviewed only two positions held on the subject matter. A major hypothesis that refutes the financial development-output growth nexus is the "financial irrelevance hypothesis" as espoused by Lucas (1988). The hypothesis maintains the view that financial development has no long-term beneficial effect on output growth. Fan et al. (2018), Hasan et al. (2009), and Allen et al. (2005) posit that financial development is not supportive of economic growth (cited in Song et al., 2020). Bouilila and Trabelsi (2004) show that finance does not play a big role in determining economic growth in the long term. There is a theoretical proposition that holds the opposite view.

Several authors hold the opinion that financial development plays an important role in promoting output growth including national economic growth. One of the hypotheses that anchor this view is the “financial promotion hypothesis” (Fry, 1995; Schumpeter, 1912; Greenwood *et al.*, 2013; Patrick, 1966; McKinnon, 1973). Proponents of this hypothesis maintain the opinion that financial development contributes positively to economic growth. Put differently, a well-functioning financial development reduces transaction costs and transforms resources. Through the function of resource transformation, unproductive firms are converted to productive ones (Gregory & Guidotti, 1995). Financial development, as posited by Bittencourt (2012), directs entrepreneurs to choose the best productive projects to invest in thereby enhancing economic growth. Empirical works on financial development-output growth link reviewed are shown below.

In a panel data analysis, De Gregorio and Guidotti (1995) investigate the relationship between financial development and long-run economic growth using the ratio of private credit to gross domestic product (GDP) as a proxy for financial development. The study’s findings indicate that financial development contributes significantly to economic growth in the long-term in a large sample of countries, while it shows negative in Latin American countries.

Calderon and Liu (2003) explore the causality between financial development and economic growth using panel data that spans from 1960 to 1994. The study finds that financial development results in economic growth; and, a bidirectional causality exists between the two variables.

Hermes and Lensink (2004) analyze the relationship between the performance of the domestic banking sector and foreign banks recognizing the contribution of the recipient country’s level of financial development. The panel data study utilizes data that covers the period 1990-1996, and 48 countries. The study finds evidence that supports the financial development hypothesis.

Ductor and Grechyna (2015) evaluate the nexus between financial development and the real sector in a cross-sectional study that spans from 1970 to 2010. The outcome of the study shows that

the effect of financial development on output growth is determined by rising credit to the private sector.

Thangavelu and Jiunn (2004) examine the dynamic relationship between bank-based, market-based financial structures, and economic growth in Australia using the VAR model. The research study finds a strong effect of the financial market on economic growth.

III. METHODOLOGY

In this study, focus is on the relationship among \lnSGDP , \lnMKTC , $M2GDP$, and \lnCPSGDP . Given the stated variables, the functional expression of the model becomes:

$$\lnSGDP_t = \beta_0 + \beta_1 \lnMKTC_t + \beta_2 M2GDP_t + \beta_3 \lnCPSGDP_t + \varepsilon_t \quad (1)$$

where \lnSGDP represents the natural logarithm of the services sector divided by GDP; \lnMKTC stands for the logarithm of market capitalization; $M2GDP$ denotes monetization ratio; \lnCPSGDP stands for the natural logarithm of credit to the private sector divided by GDP; and, ε_t denotes the error term.

We adopt the estimation technique, Auto-Regressive Distributed Lag (ARDL) model for analysis of the data. The model has some advantages over other regression methods, which include: (a) it permits different lag structures from variables; (b) it allows variables of different stationarity properties, i.e., both stationary and nonstationary variables; and, (c) being a dynamic model, it is less susceptible to autocorrelation and other deficiencies shared by other regression models. As developed by Pesaran and Shin (2001) and cited by Amalu *et al.* (2020), the ARDL model is defined as

$$\phi(L, p) y_t = \sum_{i=1}^k \beta_i(L, p) x_{it} + \delta' w_t + \mu_t \quad (2)$$

where $\phi(L, p) = 1 - \phi_1 L - \phi_2 L^2 - \dots - \phi_p L^p$ and $\beta_i(L, p)$

$$= \beta_{i1} + \beta_{i1} L + \beta_{i2} + \dots + \beta_{iqi} L_i^q \quad i = 1, 2, \dots, k \quad (3)$$

where L is a lag operator, and w_t is an $s \times 1$ vector of deterministic variables. The choice for the optimal

lag model is determined using Akaike Information criteria (AIC).

We deploy the Bound test to determine cointegration amongst the variables of interest. As advised by Pesaran and Shin (2001), the decision for the Bound test is made using two critical values – I (0) bound and I(1) bound indicating upper and lower bounds, respectively. The null hypothesis of the Bound test denotes no long-run relationships among the identified variables. The null hypothesis is rejected, if the test statistic is greater than I(1) bound. There is no cointegration, if the test statistic is lower than the I(0) bound; while, the result becomes inconclusive where the test statistic falls in-between the I(0) bound and I(1) bound values.

3.1. Data

We use time series derived from the Statistical Bulletin of the Central Bank of Nigeria (CBN) 2019 edition. The annual data spans from the period 1981 to 2019. The time series are scaled and quantitative data that maintain regular frequency and are secondary. The data are secondary because they are collected from pre-existing sources. The proxies for financial development are market capitalization, monetization ratio, and percentage of credit to the private sector to GDP. As utilized in this study, the dependent variable represents the performance of the services sector divided by the nominal GDP. Other important explanations of the variables are provided below.

Table 1. Descriptive statistics

Variable	Mean	Median	Std. Dev	Min.	Max.	JB	Prob.
SGDP	0.485367	0.493600	0.052357	0.604200	0.390700	0.657975	0.720
MKTC	5584.306	472.3000	7881.275	5.000000	25890.22	8.411388	0.014
M2GDP	15.185103	12.74000	5.227466	9.150000	25.16000	5.314021	0.070
CPSGDP	1.21231	8.210000	5.399793	5.920000	20.77000	6.322956	0.042

Source: Authors' computation using Eviews software.

Table 2. Correctional matrix

Variable	SERSGDP	MKTC	M2GDP
MKTC	0.622		
	[4.829]		
	(0.000)		
M2GDP	0.644	0.917	
	5.121	[14.007]	
	(0.000)	(0.000)	
CPSGDP	0.657	0.877	0.968
	[5.301]	[11.079]	[23.371]
	(0.000)	(0.000)	(0.000)

Note: values in parentheses stand for p-values. t-statistics are shown in braces, while correlation coefficients are unenclosed. Source: Authors' computation using Eviews software

Market capitalization as adopted in this paper represents the total value of transactions in the capital market in Nigeria over the specified period. It measures the size, activity, and efficiency of the country's capital market. The capital market is a financial market in which stocks, bonds, and government securities, among other long-term securities, are traded among market participants. The monetization ratio stands for the ratio of broad money to gross domestic product (GDP). It measures the size of a formal financial sector as well as the depth of a financial sector (King

&Levine, 1993). A higher monetization ratio suggests a larger financial sector (Calderon & Liu, 2003). Private credit to GDP denotes financial institutions' claims on the private sector relative to GDP. Credit to the private sector means the total credits given to the private sector by the financial institutions excluding loans issued to the government-owned establishments. The services sector as used in this paper represents a combination of firms and other business units located in Nigeria that produce services as their end products.

Table 3. Unit root tests results

Variables	PP Test (With Trend)			ADF Test (With Trend)		
	PP t-stat	Critical V	Remarks	ADF t-stat	Critical V	Remarks
InSGDP	-5.14	-3.54**	-4.23* I(1)	-5.20	-3.54**	-4.23* I(1)
InMKTC	-4.63	-3.54**	-4.23* I(1)	-4.68	-3.54**	-4.23* I(1)
M2GDP	-6.87	-3.54**	-4.23* I(1)	-5.86	-3.54**	-4.23* I(1)
InCPSGDP	-6.13	-3.54**	-4.23* I(1)	-5.53	-3.54**	-4.23* I(1)

Note: * and ** denote statistical significance at the 1%, 5% levels, respectively. The PP test utilizes non-parametric correction attributable to Newey and West (1987) to solve possible serial correlation. We select lag truncation for non-parametric correction with the help of automated bandwidth estimator adopting Barlett kernel (Andrews, 1991).

3.2 Descriptive statistics

Descriptive statistics shown in Table 1 indicate the average of SGDP 0.486 and the ratio's maximum and minimum values as 0.39 and 0.60, respectively. As indicated in fig. 2, the services sector's contribution to GDP was at its maximum in 2016. Within the period covered by this study, the services sector, captured as Services in the Bulletin remains the biggest contributor to Nigeria's GDP compared to the other two major sectors, Agriculture, and Industry, as reported by the Bulletin. The mean of MKTC is N5584.306 bn; while the average values of M2GDP and CPSGDP are 15.19 and 11.21, respectively. The series, MKTC and CPSGDP are normally distributed as indicated by the p-values of the Jarque-Bera statistics at the 5% level.

IV. RESULTS AND DISCUSSION

We examine the variables for unit roots using two unit root tests -- Phillip- Perron unit root test and the Augmented Dickey-Fuller (ADF) unit root test. The Phillip-Perron test is conducted following the Phillips and Perron(1988). For robustness check, we conduct the Augmented Dickey-Fuller (ADF) unit root test as specified by Dickey and Fuller (1981). The results reported in Table 3 show that all the variables of interest are stationary at the first difference, at the 1% and 5% levels of significance, respectively.

The results of the diagnostic tests presented in the lower part of Table 4 show the F-statistic of 0.368 for the Ramsey RESET test, significant at the 5% level. It is an indication that the ARDL model is correctly specified. DW stat of

2.1 that shows no evidence of autocorrelation is supported by the result of a higher test order, the Breusch-Godfrey LM test as shown in Table 4. Also, there is no evidence of heteroskedasticity as revealed by the Breusch-Pagan-Godfrey test result.

Following the results of the linear association test presented in Table 2, this paper reports the correlational relationships that exist among the studied variables. SGDP and MKTC share a significant correctional relationship at the 5% level of significance. Similarly, a statistically significant correction is found between SGDP and M2GDP at the 5% level. There is a strong correlation between CPSGDP and SGDP at the 5% level of significance. Also, from the results presented in Table 2, we find significant correlations among proxies of financial development at conventional significance levels.

4.1 Long-run and short-run results

The long-run and short-run dynamics are examined with the help of the error correction model. From the long-run elasticities result shown in Table 4, we find that the performance of the capital market (InMKTC) exerts a significant positive impact on the performance of the services sector in Nigeria. The result shows that a unit increase in capital market performance as captured by market capitalization increases output of the services sector by 0.103%. This outcome is consistent with the finding of Kar and Mandal (2015), which finds a strong positive effect of stock market performance on output growth. Also, the result of Bekaert et al. (2005) corroborates this study's outcome.

Table 4. Long-run elasticities

Variable	Coefficient		Std. Error		t-statistic	P-value
InMKTC	0.103	0.040	2.543	0.019	M2GDP	
	0.044	0.019	2.283	0.033	InCPSGDP	-0.287
	0.198	-1.449	0.162			
Intercepts	-0.648	0.245		-2.647	0.015	
R ² = 88% ; DW stat = 2.1						
RESET F-stat: 0.368 (0.777)						
BG F-stat: 0.372 (0.774)						
Het (White) F-stat: 0.655 (0.783)						

The selected model in the ARDL model (2,3,3,1).

Source: Authors' computation using Eviews software.

Table 5. Cointegration test result

Test stat	Value	K
F-stat	3.52	3
Critical value bounds		
Significance	I(0) bound	I(1) bound
10%	3.47	4.45
5%	4.01	5.07
	4.52	5.62
	5.17	6.36
		2.5%
		1%

Source: Authors' computation using Eviews software.

The paper asserts empirically that improving the performance of a stock market, a vital arm of the capital market, by liberalizing it will bring about a positive influence on output.

In the same vein, the effect of the size of the financial sector in Nigeria as represented by M2GDP, on services sector performance is positive and significant in the long run. This finding implies that the depth of the financial sector in Nigeria increases the performance of the services sector in the country. However, the impact of the ratio of credit to the private sector to GDP on services sector performance is weak and negative. This outcome corroborates the result of De Gregorio and Guidotti (1995) that found a negative relationship between private credit and long-run growth in Latin America. The paper suggests that poorly regulated financial liberalization could lead to a negative effect of financial intermediation on growth. Our

finding indicates that loans from the deposit money banks (DMBs) in Nigeria to the private sector have not favorably impacted the performance of the services sector. The unfavorable business environment in Nigeria cannot be left out as a major cause of this. Some factors that impede productive activities of the sector include inadequate financial support for the services sector from the government, the rising cost of funds from the deposit money banks (DMBs), erratic power supply, gross shortage of other social facilities, poor training of the service providers, declining education system, etc. The existence of these impediments prevents service providers from efficiently maximizing the yield of credits taken from financial institutions.

Table 5 shows the result of the cointegration test. The result indicates no evidence of a long-run relationship between the variables of

interest at the 5% level. The short-run result reported in Table 6 shows the short-run coefficients of the explanatory variables. This study finds that each of the proxies of financial development has an insignificant impact on services sector performance in the short term. Moreover, the error correction

term coefficient (-0.52) is significant and negative. This suggests that a deviation in the equilibrium level in the present year will be corrected in the following year by 52%. Therefore, it takes about two years to re-establish the long-run equilibrium.

Table 6: Error correction estimation

Indices	ECM(-1)		D(lnMKTC)	D(M2GDP)	D(lnCPS)	
Coefficients	-0.52	-0.02	0.01		0.06	
Std. error	0.15	0.03	0.01		0.07	T-stat
	-3.40	-0.76	1.20		0.86	P-value
	0.458		0.244	0.40		0.00

Source: Authors' computation using Eviews software.

V. CONCLUSION AND RECOMMENDATIONS

This paper examined the relationship between financial development and the services sector performance in Nigeria. Our finding shows that capital market development contributes significantly and positively to the performance growth of the services sector in Nigeria. In support of this finding, Levine and Zervos (1996) argues that an advanced stock market offers various forms of financial services compared to the banking industry. The Nigerian Stock Exchange (NSE), which offers equity and debt instruments to investors, plays an important role in transmitting funds to the services sector in Nigeria as revealed by this study's outcome. The transmission channel favors the services sector.

We find a positive effect of monetary aggregates on the performance of the services sector. It is an indication that the increasing size of the financial sector in Nigeria strongly influences the services sector, hence the increasing growth recorded in the sector. Certain sub-sectors of the services sector such as trade; information and communication; real estate; and professional, scientific and technical services; have performed relatively well over the years owing to the favorable financial space occasioned by expanding financial sector in Nigeria. The education industry is not left out. The increasing private sector investments recorded in secondary and tertiary schools across the country in recent times could not have been possible without financial contributions from the expanding financial sector and investments from the capital market. However, the findings of this paper indicate that credit from the financial institutions in Nigeria has not positively improved the services sector output. This outcome

may not be unconnected to the rising business impediments in the macroeconomic environment in Nigeria, which is characterized by multiple taxations, high cost of import duties, erratic power supply, poor motorable roads, etc.

In light of the findings of this study, we recommend that the federal government should adopt effective fiscal measures to address rising fiscal inadequacies that tend to obstruct growth in the services sector. We believe that proactive implementation of effective fiscal measures will address the rising cost of doing business in Nigeria.

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Fig. 1. Trend of ratio of private credit to GDP and the monetization ratio

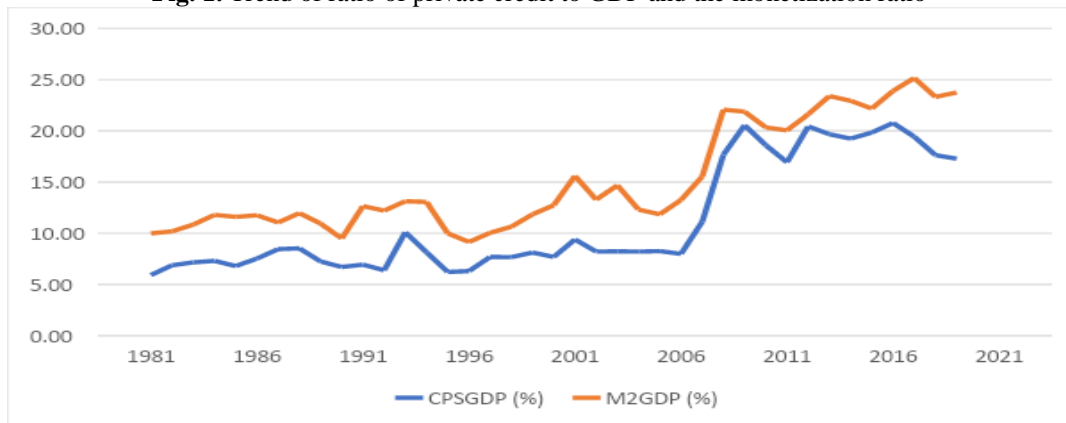


Fig. 2. Trend of ratio of services sector performance to GDP

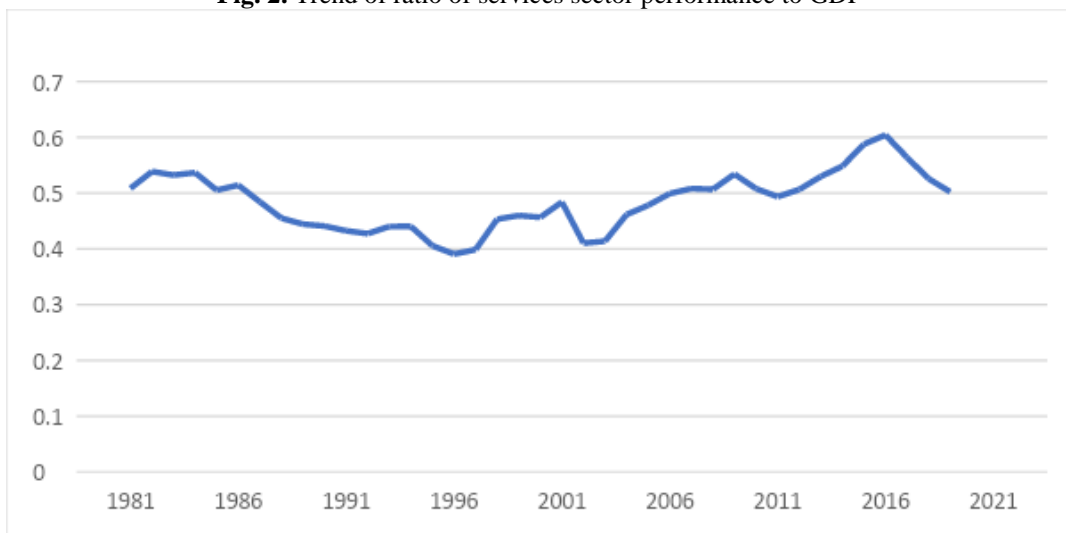
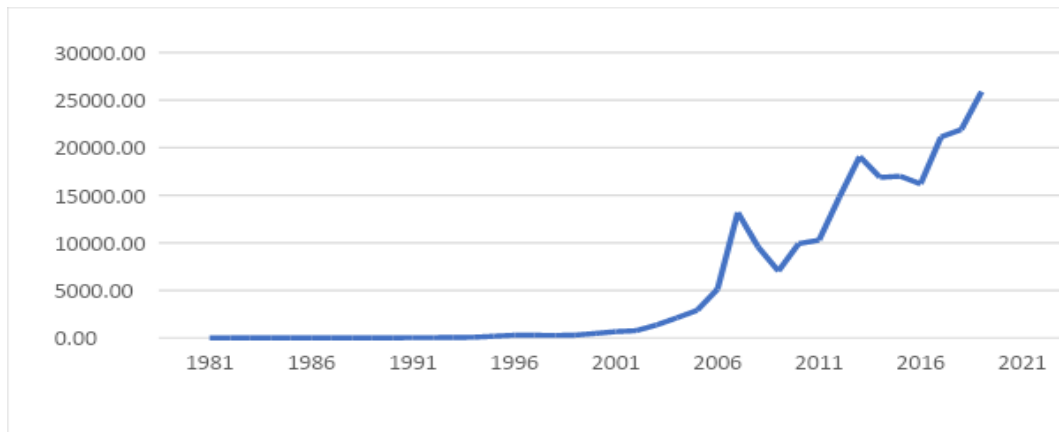


Fig. 3. Graphical presentation of market capitalization in Nigeria (1981-2019)



Unit: one billion naira