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Impact of Market Capitalization on Gross Fixed Capital Formation In Nigeria : 1985-2020

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ABSTRACT

This study examined impact of market capitalization on capital formation in Nigeria for the period of 1985-2020. Data were collected from secondary sources. The model was estimated with ARDL-ECM technique. The variables analyzed are Gross fixed capital formation (GFCF), Market capitalization (MCAP), Number of deals (NOD), change in Value of transaction (CAT), All share index (ASI) and Total listed equities and government stocks (TLE). The unit root resultindicates that CAT, ASI and TLE are stationary at level I(0) while GFCF, MCAP and NOD arestationary at first difference I(1). The ARDL bound test for co integration confirms the existence of co integration among the variables under consideration. The ARDL_ECM parameter is negative(-) and significant which is-0.570142, this shows that 57% percent disequilibrium in the previous period is being corrected to restore equilibrium in the current period. Finally, in the long run all the variables have significant impact on gross fixed capital formation except TLE. It was noted that MCAP, NOD and ASI have negative statistically significant impact on gross fixed capital formation. However, CAT and TLE have positive statistically significant and negative statistically insignificant impact on gross fixed capital formation respectively in Nigeria. The study concluded that market capitalization had negative significant impact on gross fixed capital formation in Nigeria. Hence, recommended that there is need for government to create enabling environment to enhance market participation through transparent and accountability by regulatory authority. This will attract investors to invest in Nigeria capitalmarket and market capitalization will increase as well and capital formation becomes inevitable.

Keyword: Capital formation, Market capitalization and Capital market

INTRODUCTION

Generally, the importance of capital marketas an efficientchannel of financial intermediationhas been recognized by the researchers and policy makers as a primary determinant of economicgrowth of any nation where capital is raised (Oluwatosin, Adekanye & Yusuf, [23] Igwe, Magaji & Darma, [10]). It is important for us to know that under developed or poorly functioning capital markets typically are illiquid

and expensive which deters foreign investors. Moreover, illiquid and high transactions costs also hinder the capital raising efforts of lager domestic enterprises and may push them to foreign markets (Mishra, Mishra & Mishra [17], Magaji, Abubakar & Tahir, [15]). This crucial roles cut across regions and undeniable globally, US and UK dominate capital market investments, there seems to be increasing attention on the developments of capital markets in Asia as the region is home to many emerging economies that are growing at unprecedented rates. Both in Europe and Asia, capital market becomes one of the major pillars of long-term economic growth and development. The market serves as a broadrange of clientele, including different levels of government, corporate bodies and individuals within and outside the country (Al-Faki, [4], Adoms, Yua, Okaro, & Ogbonna, [2]).

From 2011 to 2015, Africa has witnessed 441 Equity Capital Market (ECM) transactions raising a total of $41.3 billion and a record of 28 listings, at a five-year peak. Between 2011 and 2015,there were 105 Initial Public Offering (IPO's) by African companies on both African and international exchanges and non-African companies in African exchanges raising a total of $6.1billion. Despite the volatility in global ECM, companies continue to be attracted to African markets (Moime, [18]). Thus, capital market and economic development in the sub-Saharan African (SSA) emerging economies have been the rejuvenated focus of a large body of enquiry. The long-term market in Africa has witnessed considerable development since the early 1990s. For instance, in 2013 SSA, real economy grew by 12.29% and by 2017 grew to 254.64% but reduced by 1.4% in the fourth quarter of 2019 respectively, while African countries were expected to grow as one of the fastest growing economies in the world (World Bank, 2020; Statsza, [30]).

In Nigeria, the operation of capital market through capital market indicators such as marketcapitalization, all share index, volume of transaction, value of transaction, total new issues, total listed equity etc, which promote efficiency in capital formation and commercial concern. It was recorded that market capitalization was $2.373 billion as at 2002 and grew drastically to $84.874 billion in 2007 at over 3577% growth but fell drastically the next year to $48.062 billion in 2008 by −43.36% (World Bank, [30]). As at 2014, the market capitalization was $62.766 billion and fell continuously to $49.973 billion in 2015 and further to $29,792 billion in 2016 at −20.38% and −40.38% respectively; by the end period of study in 2017, the market capitalization was $37.217 billion. There are studies on capital market such as Erasmus (2016), Okoye; Modebe; Taiwo & Okorie (2016), Osakwe & Ananwude (2017), Abdullahi & Fakunmoju (2019), Augustine & Okon (2019), Mamudu & Gayovwi (2020). These studies investigated theimpactof capital market on economic growth but neglected how capital market impacts gross fixed capital formation. Gross fixed capital formation is one of the ways in which economic growth can be attainable in Nigeria. Thus capital formation is attributed to capital market activities. Again, since capital market serves as major component where capital can be raised, there is needto study the influence of this market on capital formation in Nigeria. Therefore, the problem of this study is to examine the impact of market capitalization on capital formation in Nigeria.

LITERATUREREVIEW

Capital market offers varieties of financial instrument that enable economic agents to pool, priceand exchange risk. It is where medium and long term finance are bought and sold. According to Al-Faki (2009), the capital market is a network of specialized financial institutions, series ofmechanisms, processes and infrastructure that, in various ways, facilitate the bringing together of suppliers and users of medium to long term capital for investment in socio-economic developmental projects". This further means that capital market provides facilities for transfer of medium and long term funds to various economic units. Jhingan (2004) noted that capital market is a market which deals in long term loans. It supplies industries with fixed and working capital and finance medium term and long term borrowings of the central, states and local governments. Thus the capital market comprises the complex of institutions and mechanisms through which medium term funds and long term funds are pooled and made available to individual business and governments. Thus, Capital market deepness is a term used to refer to how developed a financial system, especially in relation to the integration of a capital market with international financial institutions. This deepness also directly relates to capital

market activity of market capitalisation, trading and turnover of securities (Torre, Gozzi and Schmukler, [29]).
The Central Bank of Nigeria (2007), defines capital formation as the total change in the value of fixed assets in the economy in addition to fixed assets either for replacing or adding other stocks, it refers to the increase in the fixed capital stocks of the capital formed. Governments by their autonomous investment influence the direction of other investment by crowding in other investment as desired.

Theoretically, the function of capital market involves provision of long term debt and equity financing through the issuance of bonds, debentures and shares for investment in long-term productive assets, the efficient allocation of capital through competitive price mechanism, encouragement of a broader ownership of productive asset, and the mobilization of savings and channeling same to productive investments in order to encourage capital formation has been attributed to financial intermediation theory (Ngerebo, [19]). This theory established a relationship between stock market and capital formation. Hence financial intermediation advocated that capital market should provide a mechanism for the mobilization and transfer of savings from the fund-owners to investments that promise better and higher returns on investment. Since regulation and quantification of direct the capital market activities of borrowing is difficult, it is expected that financial institutions should mediate between owners and users of funds in the impersonal but formal way like the marketable securities created and trade on the Nigerian Stock Exchange (Gorton & Winton, [9]).

In the work of Pagano (1993) on financial market and growth revealed that financial intermediation of the Capital market could affect economic growth through three channels base on endogenous growth model. The three major channels are stated below; changing the ratio of savings funneled to investment, changing the marginal productivity of capital known as (Capital formation) and changing the rate of savings in the economy. Following this process, capital market creates an avenue for risk diversification, lowering transaction cost; provides liquidity and lowers information asymmetry by which it contributes to capital formation through marginal productivity of capital. Iyoha, Oyefusi & Oriakhi (2003) state that capital market activities are anchored on economic factors which include; level of natural resources, the rate of capital accumulation, technical progress and entrepreneurial development. The economic factors determine the economic growth which gives room for wealth accumulation and the rate at which it grows through savings and investment. Therefore, financial intermediation is the theoretical basis for this study which provides variables such as capital formation, market capitalization, new issues, all share index, equity, and value of transaction where modeled for the study is anchored.

Empirically, Okunlola (2012) regresses Gross Domestic Product against yearly stock market performance variables adopting a multi-linear approach on Nigerian data. The result shows apositive and significant relationship between total market capitalization, total stock exchange and economic growth indicator respectively. Erasmus (2016) examines the relationship between stock market evolution and sustainable economic growth in Nigeria. The study employs Auto-Regressive Distributed Lag (ARDL) - bounds testing approach and a combined stock market indicators index to examine the relationship. The study finds that, in the long run, stock markets have no positive and at best mixed effect on economic growth in Nigeria.The study alsosupports the numerous past studies, which have reported negative/mixed or inconclusive results on the effects of stock markets on economic growth.

Ngerebo, T.A. & Torbira, L. L. (2014) examined the role of capital operations in capital formation in Nigeria from 1980 to 2011 using ordinary least square and granger causality. The Augmented Dickey-

Fuller test results indicated that the data used achieved stationary after a first differencing at the order 1(1). The analysis revealed the existence of positive and significant long run relationship between capital marketactivities and gross fixed capital formation inNigeria. The Granger Causality Test results reveal that there is a unidirectional causality flowing from Gross Fixed Capital Formation (GFCF) to market capitalization. This suggests that growthin GFCF could raise the value of listed securities, boost the value of the firms, increase the prices of listed equities and enlarge the size of the country's capital market.

Taiwo, Alaka & Afieroho (2016) evaluate the contribution of capital market to the growth of Nigeria's economy. To achieve this objective, an error correction model was estimated for economic growth in Nigeria, using Vector Error Correction techniques on an annual time series data spanning from 1981 to 2014. The data were subjected to Phillip Perron Unit Root Test at level and first difference. The result shows that, at one percent significance level, all the variables were stationary at first differencing. The result of the normalized co integrated series further reveals that market capitalization rate, total value of listed securities, labor force participation rate, accumulated savings and capital formation are significant macro economic determinants factors of economic growth in Nigeria.

Osakwe & Ananwude (2017) study on camaraderie reconnaissance explore the long run relationship between stock market development and economic growth in Nigeria from 1981 to 2015. Market capitalization ratio and turnover ratio were used to measure the depth of development of Nigeria's stock market, whereas growth rate of real gross domestic product facets economic growth. The data were analyzed using Autoregressive Distributive Lag (ARDL) model. From the analysis performed, the depth of development in Nigeria's stock market has positive but insignificant relationship with economic growth both in short and long run. The granger causality analysis dispelled the adeptness of Nigeria stock market to propel growth. Stock market is growth inducing but in the context of Nigeria, economic growth is independent of stock market operation. The government needs to stead fastly tackle inhibiting factors such as infrastructural inadequacy, weak institutional and regulatory framework encumbering the stock market from realization of its objective of capital mobilization for economic growth.

Inimino, Bosco, & Abuo, (2018) examine capital market and economic growth in Nigeria from 1986 to 2016. The main objective of the study was to examine the impact of capital market on economic growth in Nigeria. The Augmented Dickey-Fuller test and Auto regressive Distributed Lag model were used as the main analytical tools. The ADF unit test result revealed stationary of the variables at order zero and one, which satisfied the requirement to employ the ARDL Bounds testing approach. The ARDL Bounds test revealed the existence of long run relationship among the variables. Moreover, the result revealed that market capitalization has positive and significant effects on economic growth both in the short and long run. Number of deals has apositive and significant effect on economic growth in the long run but negative and insignificanteffect on economic growth in the short run. However, volume of transaction has a negative and significant effect on economic growth in both the long run and the short run. The result also revealed that interest rate has positive and insignificant effect on economic growth in the long run. While in the short run, it has appositive and significant effect on economic growth.

Araoye, Ajayi, & Aruwaji (2018) examine the impact of the Nigerian Stock market developmenton the nation's economic growth from 1985 to 2014. The economic growth was proxy by theGDP while the stock market variables considered included; market capitalization and market turnover ratio as proxy for stock market development in terms of size and liquidity. The study utilizes the Johansson's co integration test in establishing if along run relationship does exist between stock market development and economic growth in Nigeria. The empirical results suggest that the stock market is significant in determining economic growth in Nigeria using the error correlation model and it was found that the stock market has impacted insignificantly on the economic growth.

Augustine & Okon (2019) examine the relationship between capital market development and economic growth in Nigeria. Time series data were collected from both secondary sources and econometric analysis of Ordinary Least Square (OLS). The data covered 1981-2018.The research sought to appraise the relationship of variables, such as market Capitalization (MCAP), Number of deals (ND), all share value index (ASI) and Inflation (INF) on economic growth of Nigeria. The result revealed has a positive correlation and conform to prior expectation and significantly influenced economic growth. Inflation revealed negative correlation and conformed to apriori expectation but was insignificant on the economic growth, which makes it not determinant in economic growth in Nigeria.

Mamudu & Gayovwi (2020) examine the impact of capital market on economic growth in Nigeria with the application of the Phillips-Perron test statistics, the Johansen Co integration techniques, Pair wise Granger Causality techniques and the Error Correction Methodology on alogli near multiple regression framework. The Phillips-Perron test statistics results showed that all the selected economic and capital market variables (In RGDP, In MCAP, In TVT and In ASI) were stationary at first difference. In other words, they were found to be stationary at order one I (1), while the Johansen unrestricted co integration rank test results showed that there exists at least four and one co integrating equations respectively as both the Trace and Max-Eigen statistics revealed long run relationship between In RGDP, In MCAP, In TVT and In ASI. The empirical results showed that the entire explanatory variables of the economic and capital market met their expected signs except the all share index with a negative sign. The results also revealed that the log of market capitalization (In MCAP) and the log of total value of transaction traded (In TVT) had positive impact on the log of real gross domestic product (In RGDP) in Nigeria.
Osakwe, Ogbonna, & Obi-Nwosu (2020) examine a comparative study of the stock market capitalization on economic growth in Nigeria and South Africa for the period 2000-2018. The impressive growth recorded by Nigeria and South Africa Capital markets performance indicators are expected to transform their economies to the desired level. The study relies on time series OLS regression to analyze the data. The study found that the relationship between market

Capitalization ratio to GDP and economic growth is positive for South Africa but insignificant for Nigeria. Thus, the economic growth is positively correlated with the size of both countries' capital markets, though the size of South Africa capital market has better contribution to economic growth compared to Nigeria.

METHODOLOGY

Descriptive research design has been adopted for the purposes of this study. Then, econometrics approaches are used based on the Auto regressive Distributed Lagged Model ARDL-bounds testing approach (ECM).The regression for the underlying ARDL models fits very well, and they undergo diagnostic tests such normality, unit root and co-integration. In addition, an inspection of the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMSQ) graphs were used. Multicolinearity test using Variance Inflation Factor was carried out as well. Once the long-term relationship or co-integration has been established, the second stage involves the estimation of the long-term coefficients (which represent the optimum order of the variables after selection by the Akaike Information Criteria (AIC) or the Schwarz – Bayesian Criteria (SBC). A general error-correction model (ECM) is then formulated. The secondary data was employed in this study; they are sourced from Nigerian Stock Exchange bulletin (NSE), Securityand Exchange Commission (SEC) bulletin, Word Bank development indicators and Central Bank of Nigeria (CBN) Statistical bulletin. The data used are; market capitalization, all share index, number of deal, change in value of transaction, total listed equities and Gross fixed capital formation. They are all measured in Billions of naira.

Model Specification

The study adapted from Ngerebo - A, and Torbira, (2014) which based on the financial intermediation theory. The analysis was carried with Vector Error Model. The model is givenas:

GFCF=f (NI,MKC,ASI,VOT,CAT) - - - - - 3.1

$GFCF_t = a_{0t} + a_{1t}MKC_t + a_{2t}NI_t + a_{3t}VOT_t + a_{4t}CAT_t + ASIa_{5t} + LTEa_{6t} + U_t$ - 3.2

Where

GFCF = Changes in Gross Fixed Capital Formation

NI = Ratio of new issue to total investment in fixed assets

MKC = Ratio of market capitalization to total investment in fixed assets

ASI= All Share Index

VOT = Changes in the volume of transaction

CAT= Changes in the value of transaction

In this study changes were made by introducing total listed equity and number of deals into the model equity in order to capture the objective of the study. The model for this study is given as follows:

$GFCF_t$=(MCAP,NOD, CAT, ASI, LTE) - - - - - - 3.1

$GFCF_t = a_{0t} + a_{1t}MCAP_t + a_{2t}NOD_t + a_{3t}VAT_t + ASIa_{4t} + TLEa_{5t} + U_t$ - - 3.2

Where:

GFCF=Gross fixed capital formation

a_0=Regression Constant

a_1–a_5=Co efficient of independent variables.

MCAP=Market Capitalization

ASI=All share Index

NOD =Number of Deal

VOL=Volume of Transactions

CAT=changeinValueoftransaction

TLE =Total Listed Equities and Government Stock

Ut=Stochastic Error term (Disturbance term)

t=Time series

Instructively, the ARDL-ECM model is expressed as

$$\Delta GFCF_t = \alpha_0 + \sum_{j=1}^{m} \alpha_{1j}\Delta GFCF_{t-j} + \sum_{m} \alpha_{2j}\Delta MCAP_{t-j} \sum_{m} \alpha_{3j}\Delta NOD_{t-j} + + \sum_{m} \alpha_{4j}\Delta CAT_{t-j}$$

$$j=1$$

$$j=1$$

$$j=1$$

$$+\sum\alpha_{5j}\Delta ASI_{t-j}+\sum\alpha_{6j}\Delta TLE_{t-j}+\theta_1 GFCF_{t-1}+\theta_2 MCAP_{t-1}+\theta_3 NOD_{t-1}++\theta_4 VAT_{t-1}$$

$$j=1 \qquad j=1$$

$$+\theta_5 ASI_{t-1}+\theta_6 ASI_{t-1}+\theta_7 ECM_{t-1}+U_t \text{----------} 3.3$$

From the theories, we expect α_1, α_2, α_3, α_4 & $\alpha_5 > 0$. However, if the estimate of the parameters turn up with signs and sizes not conforming to the a-priori expectation, they should be rejected unless there is a good reason to show that the empirical data used is not faulty.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 4.1 Summary Statistics

	GFCF	MCAP	NOD	CAT	ASI	TLE
Mean	31.10022	4311469.	813487.3	444482.1	17257.11	266.5556
Median	28.50842	1037204.	536783.5	86598.95	16133.32	264.0000
Maximum	54.94827	14036042	3535631.	2375619.	57990.20	310.0000
Minimum	14.16873	2743.100	20525.00	13.90000	127.3000	220.0000
Std.Dev.	13.14006	5086819.	941327.7	616585.6	15413.76	20.18124
Skewness	0.244710	0.709484	1.349935	1.524206	0.550842	0.346720
Kurtosis	1.744225	1.888626	4.208089	4.781289	2.449567	2.987335
Jarque-Bera	2.724754	4.872933	13.12316	18.69872	2.275028	0.721528
Probability	0.256051	0.087469	0.001414	0.000087	0.320615	0.697144
Sum	1119.608	1.55E+08	29285544	16001357	621256.1	9596.000
SumSq.Dev.	6043.139	9.06E+14	3.10E+13	1.33E+13	8.32E+09	14254.89
Observations	36	36	36	36	36	36

Source: E-view Output, 2021.

In Table 4.1 the mean, media and standard deviation for each of the data used in the study are analyzed along side with other statistical analysis such as Skewness, kurtosis, and Jarque-Bera. The descriptive statistics shows the highest value for Gross fixed capital formation (GFCF), Market capitalization (MCAP), Number of deals (NOD), change in Value of transaction (CAT), All share index (ASI) and Total listed equities and government stock (TLE); 54.94827, 14036042, 3535631, 2375619, 57990.20 and 310.0000 respectively while 14.16873, 2743.100,
20525.00, 13.90000, 127.3000 and 220.0000 Gross fixed capital formation (GFCF), Market capitalization (MCAP), Number of deals (NOD), change in Value of transaction (CAT), All share

index (ASI) and Total listed equities and government stock (TLE) respectively.
On the average for Gross fixed capital formation (GFCF), Market capitalization (MCAP), Number of deals (NOD), change in Value of transaction (CAT), All share index (ASI) and Total listed equities and government stock (TLE) are 31.10022, 4311469,813487.3, 444482.1, 17257.11 and 266.5556 respectively. The Jarque-Bera statistical test determines whether the series is normally distributed or not; Jarque-Bera revealed that Gross fixed capital formation (GFCF), Market capitalization (MCAP), Volume of transaction (VOL), All share index (ASI) and Total listed equities and government stock (TLE) are normally distributed while Number of deals (NOD) and Value of transaction (VAT) were not normally distributed. The central limit theorem rules out the normality assumption of data when dealing with mean value of data set. This implies that normality assumption does not rule ARDL-ECM estimation technique.

Trend Analysis

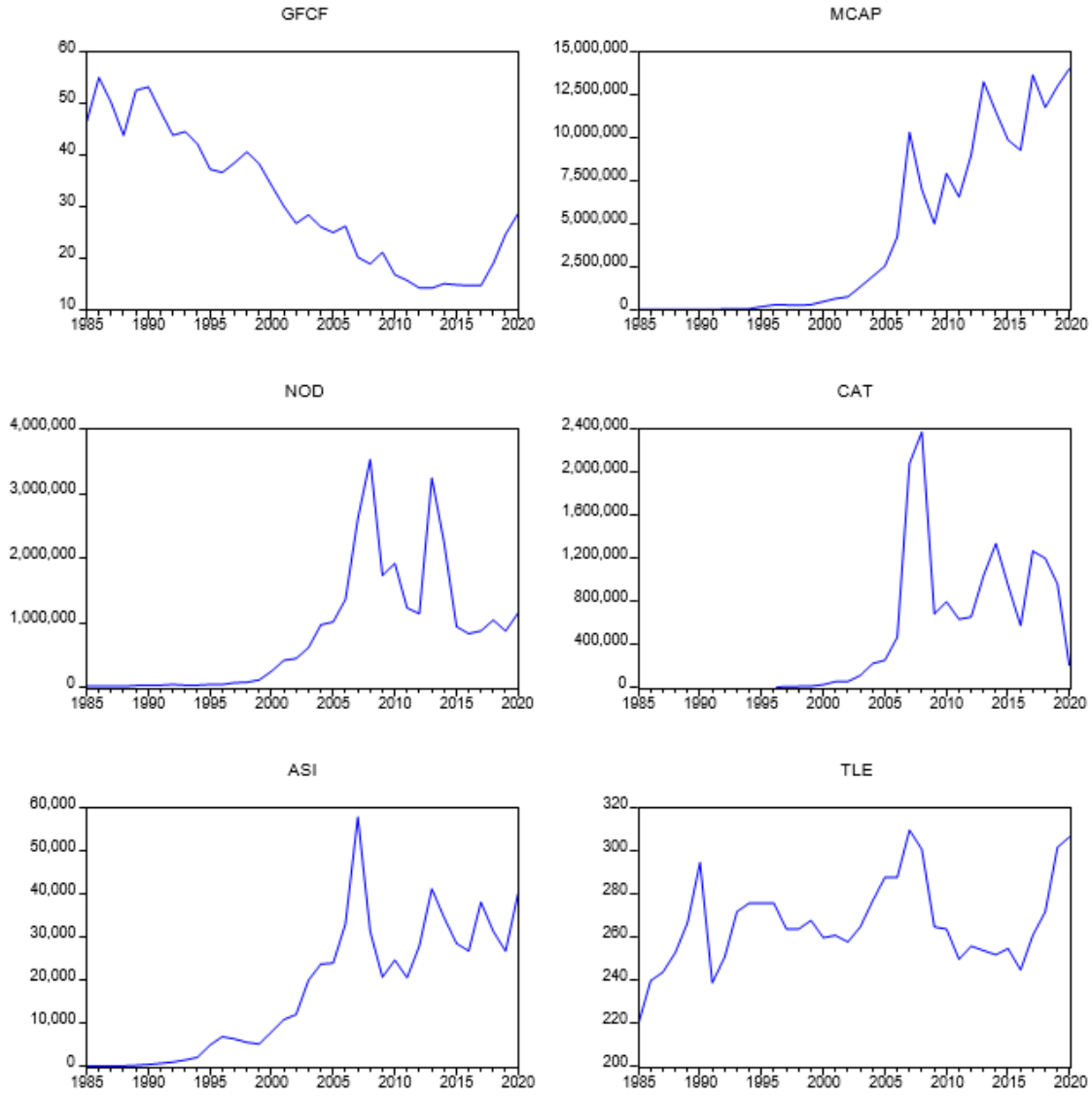


Figure.4.1:TrendAnalysis

The graph in Fig 4.1 shows the trend analysis for each of the variable over time. It was noted from the graph upward and downward movement among the variables within the period under consideration. Market capitalization (MCAP), All share index (ASI) and Total listed equities and government stock (TLE) followed the same pattern of movement which clearly indicated upward movement but fluctuated overtime. However, there was upward and downward movement in

Number of deals (NOD) and change in value of transaction (CAT) while Gross fixed capital formation (GFCF) fluctuated at decrease rate.

Unit Root Result

Table4.2:UNITROOTRESULTS(ADF)

NullHypothesis:thevariablehasaunitroot

		GFCF	MCAP	NOD	CAT	ASI	TLE
	AtLevel						
WithConstant	t-Statistic	-1.9835	-0.3561	-2.1135	-2.3549	-1.4411	-2.8950
	Prob.	***0.2923***	***0.9059***	***0.2408***	***0.1615***	***0.5510***	***0.0561***
		n0	n0	n0	n0	n0	*
WithConstant&Trend	t-Statistic	-0.7543	-2.7613	-2.6922	-3.5610	-3.4320	-2.9454
	Prob.	***0.9605***	***0.2202***	***0.2457***	***0.0487***	***0.0633***	***0.1615***
		n0	n0	n0	**	*	n0
WithoutConstant&Trend	t-Statistic	-1.2270	0.5384	-1.3679	-1.8296	-0.3311	0.7085
	Prob.	***0.1975***	***0.8274***	***0.1559***	***0.0646***	***0.5587***	***0.8637***
		n0	n0	n0	*	n0	n0
	AtFirstDifference						
		d(GFCF)	d(MCAP)	d(NOD)	d(CAT)	d(ASI)	d(TLE)
WithConstant	t-Statistic	-5.8062	-6.3469	-6.2039	-5.7671	-6.2923	-6.2452
	Prob.	***0.0000***	***0.0000***	***0.0000***	***0.0000***	***0.0000***	***0.0000***
		***	***	***	***	***	***
WithConstant&Trend	t-Statistic	-6.2791	-6.6186	-5.6303	-5.6724	-6.1785	-6.1426
	Prob.	***0.0000***	***0.0000***	***0.0003***	***0.0003***	***0.0001***	***0.0001***
		***	***	***	***	***	***
WithoutConstant&Trend	t-Statistic	-5.6405	-6.7389	-6.2823	-5.8596	-6.1100	-6.2411
	Prob.	***0.0000***	***0.0000***	***0.0000***	***0.0000***	***0.0000***	***0.0000***
		***	***	***	***	***	***

Notes:

a:(*)Significantatthe10%;(**)Significantatthe5%;(***)Significantatthe1%and(no)NotSignificant

b:LagLength basedonSIC

c:ProbabilitybasedonMacKinnon(1996)one-sidedp-values.

Source: E-view Output, 2021.

The Table 4.2 shows the unit root result for the variables used in the study. The result indicates that there variables are stationary at different order of integration. CAT, ASI and TLE are stationary at level I (0) while GFCF, MCAP and NOD are stationary at first difference I(1). This also confirmed the use of ARDL bound test for co integration.

ARDL bound test for co-integration

Table 4.3: ARDL bound test for co integration

F-BoundsTest		NullHypothesis:Nolevelsrelationship		
TestStatistic	Value	Signif.	I(0)	I(1)
F-statistic	11.18748	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: E-view Output,2021.

The table 4.3 shows the result of ARDL bound test approach to co-integration. The result showed that there is an existence of co-integration among the variables under consideration. The value of F - statistics gives 11.19 is greater than the lower and upper bound values at 5% level of significance. Therefore, there is along relationship amongst the variables.

4.4: Pair wise Granger Causality Tests Table 4.4: Pair wise Granger Causality Tests

PairwiseGrangerCausality Tests

Date:02/13/22Time:17:39

Sample:19852020
Lags: 2

NullHypothesis:	Obs	F-Statistic	Prob.
MCAPdoesnotGrangerCauseGFCF	34	1.00430	0.3787
GFCF doesnotGrangerCauseMCAP		3.27625	0.0521
NODdoesnotGrangerCauseMCAP	34	1.23709	0.3051
MCAPdoesnotGrangerCauseNOD		8.42707	0.0013
ASIdoesnot GrangerCauseMCAP	34	1.23059	0.3069
MCAPdoesnotGrangerCauseASI		0.48459	0.6208
CAT doesnotGrangerCauseMCAP	34	6.19956	0.0057
MCAPdoesnotGrangerCauseCAT		5.54749	0.0091
TLEdoes notGrangerCauseMCAP	34	0.25932	0.7733
MCAPdoesnotGrangerCauseTLE		0.15540	0.8568

Source: E- view Output, 2021

The table 4.4 shows that Granger causality results among the variables under consideration. Theresults revealed that MCAP, CAT and ASI granger causes GFCF and not GFCF granger causes them. This implies there is unidirectional relationship between MCAP, CAT and ASI and GFCF. It flows from MCAP, CAT and ASI to GFCF. The results also showed that there is no causality between NOD and GFCF as well as TLE and GFCF. In related development, there is Causality between NOD and CAT and MCAP. This implies that NOD and VAT granger cause MCAP and not vice versa. However, ASI and TLE do not granger cause MCAP. This means there is no causality between ASI and TLE to MCAP.

Data Analysis

ARDL Error Correction Regression

Table4.5: ARDL Error Correction Regression

ARDLErrorCorrectionRegression
DependentVariable:D(GFCF)

ECMRegression

Case2:RestrictedConstantandNoTrend

Variable	Coefficient	Std.Error	t-Statistic	Prob.
D(GFCF(-1))	0.814547	0.076923	10.58910	0.0005
D(GFCF(-2))	0.169517	0.063979	2.649576	0.0570
D(GFCF(-3))	1.043110	0.074307	14.03793	0.0001
D(MCAP)	-8.23E-06	6.81E-07	-12.08878	0.0003
D(MCAP(-1))	-4.19E-06	6.87E-07	-6.096044	0.0037
D(MCAP(-2))	-2.96E-06	3.97E-07	-7.470674	0.0017
D(NOD)	1.16E-05	9.39E-07	12.31060	0.0003
D(NOD(-1))	2.12E-05	1.93E-06	10.97112	0.0004
D(NOD(-2))	5.13E-06	6.16E-07	8.313998	0.0011
D(ASI)	0.000399	8.03E-05	4.963895	0.0077
D(ASI(-1))	0.000767	0.000136	5.632618	0.0049
D(ASI(-2))	0.003145	0.000209	15.06627	0.0001

D(ASI(-3))	0.002235	0.000201	11.11017	0.0004
D(CAT)	3.01E-05	2.18E-06	13.84885	0.0002
D(CAT(-1))	-7.16E-05	4.67E-06	-15.32557	0.0001
D(CAT(-2))	-6.97E-05	5.30E-06	-13.15813	0.0002
D(CAT(-3))	-2.03E-05	1.78E-06	-11.39400	0.0003
D(TLE)	-0.011105	0.013849	-0.801858	0.4676
D(TLE(-1))	0.236501	0.014991	15.77669	0.0001
D(TLE(-2))	0.036950	0.012091	3.055978	0.0378
D(TLE(-3))	0.037085	0.010967	3.381569	0.0277
CointEq(-1)*	-0.570142	0.040747	-13.99218	0.0002

R-squared	0.984859	Meandependentvar	-0.472151
AdjustedR-squared	0.953062	S.D.dependentvar	3.328704
S.E.ofregression	0.721166	Akaikeinfocriterion	2.395955
Sumsquaredresid	5.200809	Schwarzcriterion	3.403649
Loglikelihood	-16.33529	Hannan-Quinncriter.	2.729977
Durbin-Watsonstat	3.193524		

Source:E-viewOutput,2021.

Table 4.5 revealed the short run analysis which was the results of ARDL - ECM. Since the variables were found to be co-integrated implying that they have long run equilibrium, it is necessary to test for short relationship, the ECM parameter is negative(-) and significant which-

0.570142, this shows that 57% percent disequilibrium in the previous period is being corrected to restore equilibrium in the current period. However, the coefficients of MCAP and ASI have statistically negative significant impact on gross fixed capital formation at current period. On theother hand, NOD, ASI and CAT have positive statistically significant impact on gross fixed capital formation at current period. However, TLE have negative statistically in significant impact on gross fixed capital formation at current period. The multiple coefficient of determination (R^2) measures the proportion of variability in the GFCF that is accounted for independent variables. The $R^2 = 0.984859$ gives a high and strong positive relationship between GFCF and independent variables in the model. Thus, the model has good fit since about 98% changes in the GFCF are due to changes in explanatory variables while 2% changes in GFCF is due to other factors that were not captured in the model.

ARDL Long Run Regression

Table 4.6 ARDL Long Run Regression Dependent Variable: GFCF

LevelsEquation

Case2:RestrictedConstantandNoTrend

Variable	Coefficient	Std.Error	t-Statistic	Prob.
MCAP	-4.49E-06	1.24E-06	-3.635166	0.0221
NOD	-2.48E-05	8.61E-06	-2.880486	0.0450
ASI	-0.002109	0.000281	-7.512180	0.0017
CAT	0.000145	3.95E-05	3.670731	0.0214
TLE	-0.244297	0.134173	-1.820765	0.1428
C	111.1464	34.73570	3.199773	0.0329

EC=GFCF-(-0.0000*MCAP -0.0000*NOD-0.0021*ASI+0.0001*CAT

-0.2443*TLE+111.1464)

Source: E-view Output, 2021.

The result presented in Table 4.6 shows the long run estimation result, in the long run all the variables have significant impact on gross fixed capital formation except TLE. It was further noted that MCAP NOD and ASI have negative statistically significant impact gross fixed capital formation. However,

CAT and TLE have positive statistically significant and negative statistically insignificant impact on gross fixed capital formation respectively in Nigeria. By implication, increases in change in value of transaction will lead to increases in gross fixed capital formation in Nigeria but increases market capitalization, number of deals, all share index and total equity and government stock have not translated to increase in gross fixed capital formation. Actually, this does not conform with a-priori expectation. Since the p-value of 0.0221

which is less than 0.05. This implies that market capitalization has significant impact on gross fixed capital formation in Nigeria.

Multicolinarity Result

Table 4.7: Multicolinarity Result

VarianceInflationFactors
Date:02/13/22Time:17:29
Sample:19852020
Includedobservations:32

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
GFCF(-1)	0.023929	595.6521	87.94449
GFCF(-2)	0.031694	835.2271	125.8773
GFCF(-3)	0.027849	790.8354	120.2523
GFCF(-4)	0.049558	1481.109	211.0505
MCAP	5.62E-12	6809.339	3554.832
MCAP(-1)	2.12E-12	2247.732	1231.811
MCAP(-2)	2.15E-12	1998.343	1149.850
MCAP(-3)	3.08E-12	2542.404	1536.983
NOD	1.71E-11	720.2009	370.4318
NOD(-1)	5.39E-12	221.5675	119.6832
NOD(-2)	8.26E-12	334.8165	187.9954
NOD(-3)	5.09E-12	202.0903	118.2517
ASI	3.73E-08	545.8655	200.8081
ASI(-1)	8.73E-08	1169.740	462.3932
ASI(-2)	2.29E-07	2936.784	1250.453
ASI(-3)	3.34E-07	4033.340	1841.783
ASI(-4)	1.18E-07	1295.110	628.2087
CAT	4.26E-11	668.4708	406.5218
CAT(-1)	6.39E-11	1002.024	616.8867
CAT(-2)	6.07E-11	908.3503	585.7080
CAT(-3)	4.69E-11	649.7953	439.1510
CAT(-4)	1.42E-11	178.6590	126.3184
TLE	0.000896	1614.390	7.109953
TLE(-1)	0.001162	2066.015	8.168567
TLE(-2)	0.001188	2083.599	7.756362
TLE(-3)	0.000593	1031.979	4.160196
TLE(-4)	0.000482	832.3383	4.124629
C	216.1424	5319.600	NA

Source: E-view Output, 2021.

The multicolinarity was determined with variance inflation factors (VIF) and the test shows

that there is no multicolinarity among the variables because uncentred VIF for each of the variable is greater than centred VIF as indicated in Table 4.7

Stability Result

Fig4.2: Stability Result (CUSUM)

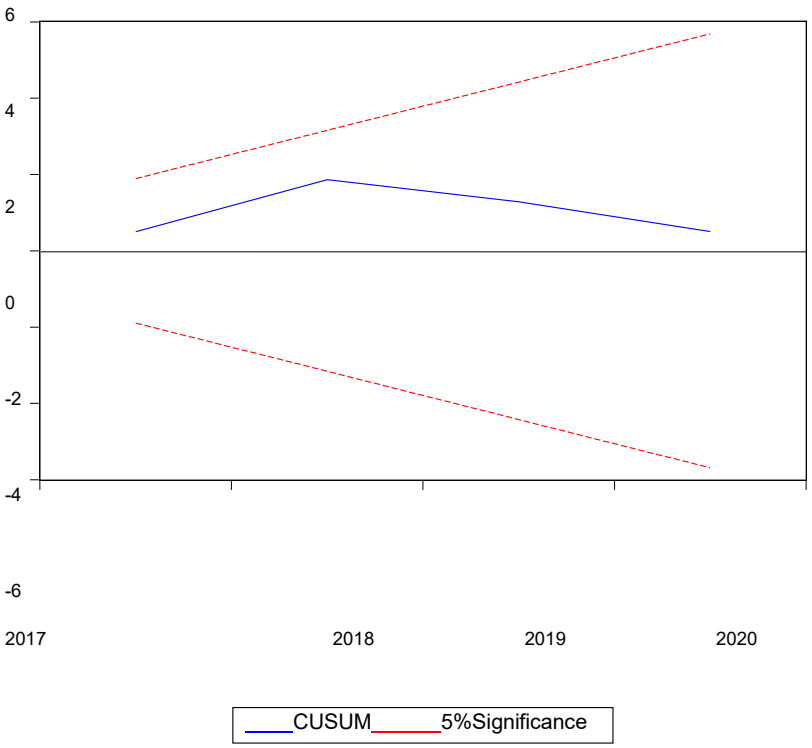
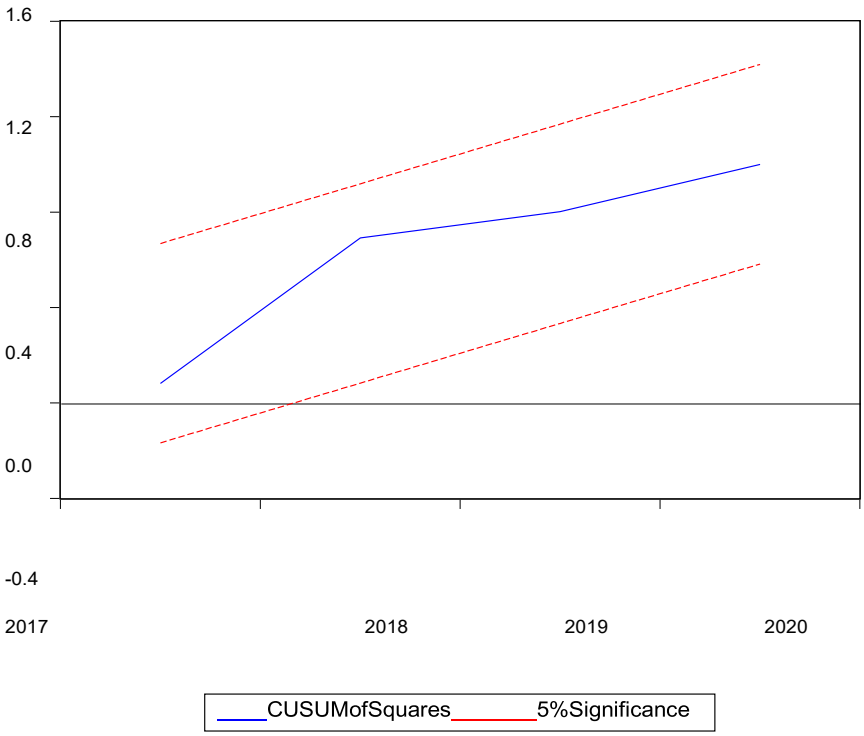


Fig 4.3: Stability Result (CUSUM of Squares)



Both CUSUM and CUSUM of squares are used to determine the stability of the model, the Fig

4.2 and Fig 4.3show that both CUSUM and CUSUM of squares fall within the upper and lower boundary which implies that the model is stable over time with the period under consideration.

From the estimation results both in short and long run, it was revealed that in the short run market capitalization had negative significant impact on gross fixed capital formation in Nigeria at the same time have negative significant impact on gross fixed capital formation in the long run. This implies that increases in market capitalization will lead to decreases in gross fixed capital formation both in the short run and long run. However, the focus should be in long run analysis where there is negative impact on gross fixed capital formation. This does not conform with a-priori expectation because it is expected that market capitalization should have positive significant impact on gross fixed capital formation. This can be attributed to other sources and not necessary capital market activities. The result here is contrary to Okunlola (2012), Osakwe & Ananwude (2017) & Augustine & Okon (2019) whose studies showed a positive and significant relationship between total market capitalization and economic growth. However, the empirical studies of Araoye, Ajayi & Aruwaji (2018) and Erasmus (2016) were in line with this study.

CONCLUSION

The study concluded that in the short run and long run, market capitalization had negative significant impact on gross fixed capital formation in Nigeria, number of deals and all share index had positive and negative significant impact on gross fixed capital formation in short and long respectively. Total equity and government stocks have negative insignificant impact on capital formation both in long run and short run and change in value of transaction had positive significant impact on capital formation in Nigeria both in short and long run and recommended that there is need for government to create enabling environment to enhance market participation through transparency and accountability by regulatory authority. This will attract investors toinvest in Nigeria capital market and number of deals will increase as well and capital formation becomes in evitable.

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