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Currency devaluation and capital market performance in Nigeria

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Abstract

The research study delves into investigating the effects of currency devaluation on capital market performance in Nigeria using time series data from 1989 to 2021. Currency devaluation was captured using purchasing power parity and exchange rate of Nigeria domestic currency, while capital market was captured using total market capitalization of the Nigerian stock exchange with all variable serving as explanatory variables to Nigeria's gross domestic product. Also the research employs the use of Johansen co-integration test to assess the long run relationship between all variables that are stationary at first order. Also granger causality test was adopted to determine the direction of causality between variables. The study found that exchange rate and purchasing power parity has a significant negative effect on total market capitalization in the long run. In addition, all independent variables granger cause each other as well as dependent variables. The study recommends that government should implement monetary policies that will increase the tempo of free financial flow into the capital market that will in turn stimulate economic growth and also recommended for further studies.

Keywords: Purchasing power parity; Currency devaluation; Capital market and gross domestic product; Exchange rate; Nigerian stock exchange.

1. Introduction

The major engine of growth and development is the capital market which accommodates certain institutes for the creation, distribution and exchange of financial assets and management of long-term liabilities. Capital market serves as a transmission mechanism of investment and savings across the economic sectors into productive activities with a view to realize inclusive growth in the economy. Ariyo and Adelegan (2005) pointed out that capital market works well and hence contribute to the growth in an economy where the government policy is directed toward efficient allocation of financial resources i.e. an economy with effective reform that is targeted towards providing adequate financial resources will have a capital market that has improved transactional efficiencies.

Currency devaluation is a necessity for growth and development for any country that engages in trade openness. Devaluation is often refers to downward adjustment of country's official exchange rate in relation to other countries, (Kingma & Obstfeld 1999). Most often, parties in international transactions do not use the same national currency; therefore, the currency used in international economic transactions has to be bought or sold against the national currency of the respective trading partners and the exchange rate play a key role in the transactions of the partners. Devaluation in developing countries has become a major subject of controversy because for some currency devaluation and export diversification improves terms of trade, it leads to low aggregate demand for imports of goods and services, promotes local content and reduces debt burden as well as increase in foreign reserve resulting from income generated by exports while for others currency devaluation comes as a social and economic problems like inflation, depression and uneven distribution of income and wealth (Kigane 1991).

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Currency Devaluation for an import-driven economy will be suicidal because it will lead to increase in further domestic inflation and hardship for the citizens, through higher import prices, investors would then require higher returns and risk premium to compensate for the inflation thereby resulting to price crash and increase risk of the existing securities like bonds and treasury bills issued prior to the Currency devaluation; the Central Bank of Nigeria may raise the interest rate and as the interest rate increases, investors will be averse to invest in the existing securities because it will pay lower than the new exchange rate and this often encourages investors to divest from the capital markets because of devalued currency. But for export-driven economies, they could devalue their currencies because it will improve the trade balance, boost the exporter's trade, profits and the products of such country become more price competitive in the international market. However, fluctuations in the foreign exchange market of a country impact its trade and investment says Harvey and Agyapong (2008).

Garba (1997) opined that exchange rate stability could discourage speculation in the foreign exchange market and reduce capital flight. However, it is a necessity for Nigeria to develop stronger reforms for currency devaluation in an economically sustainable way in order to avoid difficulty in attracting investors and also in capital market performance.

1.1. Statement of the problem

Nigeria as one of Africa's biggest economies has embark on various economic reforms and programme with a view to strengthening its macroeconomic performance over the years. One of the reforms is the devaluation of currency that can be traced back to Structural Adjustment Programme (SAP) of 1986 which has had positive and far reaching implications on the activities of the capital market in Nigeria. Despite these reforms the Nigeria currency is nose-diving rapidly against the American dollar (International standard of currency measurement). Given that a strong currency is an incentive to investment while a weak currency will serve as a disincentive to investment.

The value of naira fluctuates, for example, statistical records have shown that with the Structural Adjustment Programme in 1986, the naira started depreciating against the US dollar and ₦3.32 was exchanged for 1 US dollar. From 2006 to 2008 the value of naira to US$ was ₦125, but further was devalued from ₦150.3 in 2010 to average of ₦153.90, ₦156.81 and ₦305.25 per US$ dollar in 2011, 2013 and 2017 respectively. Also in 2019 the value was ₦306.9 per US$ dollar. But prior to the discovery of COVID'19 pandemics, the value of naira experienced fluctuation and as at July 2021, the value of the official exchange rate was ₦413 per US$ dollar. But in a swift reaction to the effect of subsidy removal by the Tinubu Administration, the exchange rate has skyrocket to over a thousand naira. In the same vain the capital market moves so strongly on the same direction with the currency exchange rate. Before 1988, the total market capitalization was less than N10 billion from 1988 to 1994. It hovered between ₦10 billion to ₦57 billion. In 2003 it was ₦1.3593 trillion, ₦2.1125 trillion in 2004, ₦13.181 trillion in 2007, but it fell to ₦9.562 trillion in 2008 due to the global financial meltdown and it was ₦21.128 trillion in 2017. Statistically, Capital market collapsed with about 70% between 2008 and 2009, it recorded ₦25.890 trillion in 2019 and the Nigerian Stock Exchange reported ₦38.351 trillion in march, 2021, averaging ₦16.245 trillion from June 2008 to March 2021.

The tactic of Currency devaluation failed over the years because the country holds a large number of foreign bonds since it will make those interest payments to be relatively costlier and the country has always been known for high level of import dependent in the international market and this tends to cause currency devaluation not to lead to its intended benefits in Nigeria. With this in view, the need to carry out this research work has become necessary amidst other related researches carried out on the study; in the developing countries like Nigeria, research on the effect of currency devaluation on capital market performance is scanty. Also, the macroeconomic variables used in the past studies have undergone changes owing to the constant changes in the economic system. Hence, it is imperative to carry out this research to establish the current effects of currency devaluation on capital market performance in Nigeria.

The broad objectives of this research include: to analyze the trend of currency devaluation and capital market performance, to examine the long run relationship between currency devaluation and capital market in Nigeria, also to examine the effect of currency devaluation on capital market performance and the effects on exchange rate, Market Capitalization and purchasing power parity on Gross domestic product growth rate in Nigeria.And it made use of secondary data (from 1989-2019) which was collected from the Central Bank of Nigeria Statistical Bulletin and Nigeria Stock Exchange publication. This research finding will be useful to domestic and portfolio managers, investors, stock brokers, investment analysts and it will contribute to existing literatures by empirically investigating and assessing the effect of currency devaluation on the performance of capital market. For the government, it would provide a framework for policy formulation and implementation and help policy makers to critically examine the extent to which currency devaluation affect capital market performance in Nigeria with a view to getting relevant policies, reforms and even programs.

2. Literature review

2.1. Conceptual Review

2.1.1. Concept of Currency Devaluation

Countries normally engage in international transactions with one another and these transactions, mostly economic, are made among individuals, firms, organizations and public entities against the backdrop of the existence of different currencies used by countries. Devaluation refers to downward adjustment of country's official exchange rate in relation to other countries (Kingma & Obstfeld, 1999). It refers to falling exchange value of a currency for other foreign currencies as a result of the forces of demand and supply which may be temporary. Devaluation is conventionally believed to be a tool for increasing a country's balance of trade, it increases exporters revenue and it is good for exporters, it increases importers cost and it is bad for importers (Kindleberger, 1958). When domestic currency is devalued against foreign currency, exporters are able to reduce the price of exports in the international market and become competitive.

According to Krugman & Taylor (1978), devaluation shows the different channels where contractionary effects on aggregate demand may reverse the effects on expenditures unless the trade account is balanced because the idea of devaluation is to change the distribution of income of a country that causes income shifts. Devaluation of currency is usually triggered when the country is experiencing an adverse balance of payment crisis or by worsening economic conditions transmitted into the domestic economy from the foreign market. Devaluation to some analyst will cripple Nigeria's economy at this point in time because the rate of inflation will rise considering that Nigeria is import dependent, the country do not have many competitive products to export for now.

2.1.2. Concept of Capital Market

The capital market is meant for trading long term financial securities, including ordinary shares, long term debt securities such as debentures, unsecured loan stock and convertible bonds. Government bonds and other public sector securities such as Treasury bills and stocks are also traded on capital markets (Murinde, 2006). Capital market is a market for government securities, corporate bonds, the mobilization and utilization of long-term funds for development and in this market institutional investors provide long term funds in exchange for long term financial assets offered by borrowers like owners of businesses, individuals and government. Such securities might be raised in an organized market such as the Nigerian Stock Exchange. The existence of a stock exchange in a capital market helps to broaden the share ownership base of firms; and evenly distribute the nation's wealth by making it possible for people to own shares in a firm by purchasing the shares, bond/stock through the simple mechanism of the capital market. Government bonds and other public sector securities such as Treasury bills and stocks are also traded in capital markets.

Capital Market is the market segment where securities with more than one-year maturities are being traded, for example, equity shares, preference shares, debentures and bonds, they are and still remains the source of long-term funds for businesses and industries (Kevin 2009). Capital market exist for the purpose of matching the demand for funds with the supply of funds, thereby fueling economic growth through the allocation of funds (which could technically be termed as financial intermediation) that can be used in job creations, building of infrastructures as well as financing of innovative ideas. The fact still remains that no business can grow or expand without a corresponding increase need in capital rather than ordinary working capital support which most deposit money banks are willing to offer, capital market even without collateral, offers most companies the opportunity of raising such capital.

2.2. Theoretical Review

2.2.1. Capital Assets Pricing Model

The Capital Asset Pricing Model (CAPM) was developed independently by Sharpe (1964), and Mossin (1966). This is a measure of the relationship between the expected returns of an investments whether in capital market or in business operations and the risk of investing in security. It assumes that there is an asset i.e. the risk free asset that has a certain return and with a risk-free asset the efficient frontier is no longer the best that investors can do. Capital Assets Pricing Modelis also a useful tool for estimating the cost of capital for firms and the returns that investors require in investing in a company's assets. It provides a methodology for quantifying risk and translating it into estimates of expected rate of equity. The principal advantage of Capital Assets Pricing Model is the objective nature of the estimated costs of equity that the model can yield. Financial managers can use it to supplement other techniques and their own judgment in attempting to develop realistic and useful cost of equity calculations.

The CAPM is an early asset pricing approach and the single factor model specifies:

$$SRJ = RF + BJ\ (RM - RF) \quad \ldots\ldots\ldots 1$$

Where RF is the risk free rate, (RM - RF) is the risk premium in the capital market, βj is the systematic risk of the asset and SRJ is the expected return on the asset.

Fama and French (1992) extended this model as a three factor model with j= i.

$$SR_I - RF = A + B_1\ (RM - RF)_I + \beta_2 E(SMB)_i + \beta_3 E(HML)_i \ldots\ldots\ldots\ldots 2$$

Where SMB is the small stock portfolio return minus the large stock portfolio return. HML represents the portfolio return of a high book-to-market stock minus portfolio return of a low book-to-market stock.

3.3 Empirical Review

Adekoya & Fagbohun(2016) investigated the effects of currency devaluation on manufacturing output growth from 1980 to 2014 in Nigeria using ADF for stationarity test, Engel-Granger co-integration and OLS. The result revealed that a long run relationship exists among the variables and that import exert positive impact on the manufacturing output growth. Momodu & Akanni (2016) believed that currency devaluation is one major endogenous variable affecting economic growth after investigating the impact of currency devaluation on economic growth. Adopting the Johansen co-integration method, they concluded that the short term changes in economic growth may actually be inefficient explanation for currency devaluation.

Harcourt (2017) examined the impact of prime lending rate, inflation, real GDP and exchange rate on the performance of capital market in Nigeria using ADF test. The study found out that the increasing inflation rate in the country often impact negatively on the performance of the stock market and that previous market performance often impact on the present performance.Adeyemi & Ajibola (2019) looked at the impact of naira devaluation on trade balance from 1986 to 2017 in Nigeria. With the use of Engel-Granger Co-integration test, the result evidence revealed that devaluation of naira had no significant influence on changes in trade balance in the long run and that the devaluation of the naira exerts no significant impact on trade balance also.

Dilber & Titilope (2019) looked at the effect of currency depreciation on economic growth in Nigeria. With the use of ARDL estimating techniques, findings showed that exchange rate had a significant effect on economic growth. Nweze & Ejim (2021) examined the impact of devaluation of the currency on Market share of Manufacturing Firms in the South-Eastern part of Nigeria. They came out with the fact that currency devaluation has an effect on the production, Citizens, exportation and importation of goods, economy and the government itself. The study used both quantitative and qualitative explanatory mixed method design.

Afolabi (2021) adopted the flow and stock-oriented model with VEC model and data from 2000 to 2017 to look at the exchange rate misalignment and stock market performance in Nigeria. Result showed that exchange misalignment often weakens the growth of the Nigeria stock market. Ekundayo, Xuan & Idimmachi(2021) analyzed the symmetric andasymmetriceffects of exchange rate volatility and fluctuations on Nigeria capital market and her financial sector with ARDL bound testing framework, the research outcome hoed that exchange rate volatility negatively but significantly impact financial development and capital markets.

Fapetu et.al.(2021) studied the nexus between capital market performance and the macroeconomic dynamic in Nigeria between 1993 & 2020. Their data was analyzed using VECM techniques and the result revealed a significant long-run relationship between capital market performance and macroeconomic dynamic, supporting the Arbitrage Pricing Theory(APT). Ihenyen, Epekele & Owonaro(2023) examined the effects of weakening currency on Nigeria Stock Market adopting purposeful sampling and multiple regression analysis. Their findings showed that currency depreciation correlate negatively with the performance of capital market.

3. Methodology

3.1. Model Specification

The study adopted the modified model of Kolawole and Olalekan (2014) to estimate the effect of Currency Devaluation on Capital market performance in Nigeria. The functional and econometric relationship between the dependent variable (Capital market Performance) and the independent variable (Currency Devaluation) is written as:

$$MKCAP = f(\text{exchange rate, purchasing power parity}),$$

where market capitalization is a measure for Capital Market Performance.

$$MKCAP = f(EXR, PPP) \quad \ldots\ldots\ldots\ldots 3$$

$$GDP\_GR = f(\text{market capitalization, exchange rate, purchasing power parity})$$

$$GDP\_GR = f(MKCAP, EXR, PPP) \quad \ldots\ldots\ldots 4$$

To suit this study, it is modified in a linear regression model as:

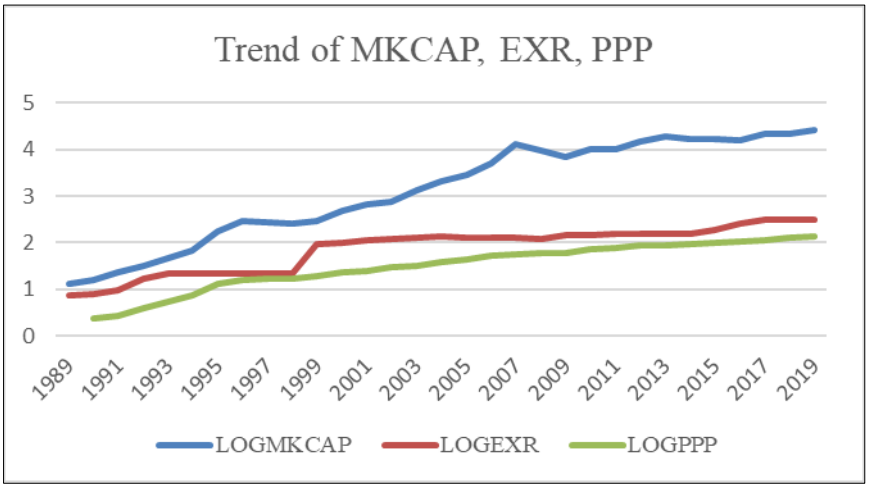
$$MKCAP_t = \beta_0 + \beta_1 EXR_t + \beta_2 PPP_t + \mu_t \ldots\ldots\ldots\ldots 5$$

$$GDPGR_t = \beta_0 + \beta_1 MKCAP + \beta_2 EXR_t + \beta_3 PPP_t \mu_t \ldots\ldots\ldots\ldots\ldots 6$$

Where:
EXR =Exchange Rate, PPP = Purchasing Power Parity, MKCAP= Market Capitalization
GDP_GR = Gross Domestic Product Growth rate, μ= Error Term, β_0 = Constant β_1, and β_2, are estimated parameters.

4. Results and Findings

Trend of Currency Devaluation and Capital market performance in Nigeria



Source: Author's Computation (2020) from CBN Statistical Bulletin Unit Root Test Result

Figure 1 Trends of Exchange rate, Purchasing Power Parity and Market Capitalization

X axis represents the years on the graph while y axis represent the numbers on the graph.

Table 1 Results of Augmented Dickey-Fuller Unit Root Test

Variable	Level ADF Test Statistic	Mackinnon Critical Value at 5% level	First Difference ADF Test Statistic	Mackinnon Critical Value at First Difference at 5% level	Decision
MKCAP	-2.076744	-2.963972	-4.167215*	-2.967767	I(1)
EXR	-1.741073	-2.963972	-5.039689*	-2.967767	I(1)
PPP	-2.766902	-2.971853	-3.993921*	-2.986225	I(1)

*Significance at 5% level; **Source:** Author's Computation, 2021.

From the ADF unit root results presented in Table 1, it shows the result of the stationary test.The study used ADF Unit Root Test to determine the order of integration of the variables. The ADF was carried out at Level and at First-difference. The null hypotheses underlying the unit root testing is that the variables under investigation have a unit root and the alternate that there is no unit root. It also shows that MKCAP, REXR and PPP are stationary at first difference (i.e. integrated at I(1)) since their ADF statistics (absolute values) exceeds the critical values at 5% level of significance. This therefore implies that the variables specified to be used in this model are stationary and can be used to run any necessary analysis that is needed.

4.1. Determination of the Long run Relationship between Currency Devaluation and Capital Market Performance in Nigeria

The second objective of this study is to determine the long run relationship between Currency Devaluation and Capital Market Performance and the study employed the Johansen co-integration approach to test the objective.

Table 2 Result of the Johansen Co-integration

Unrestricted Co-integration Rank Test (Trace)					
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical value**	**Prob.****	**Decision variable**
None *	0.688545	52.15746	29.79707	0.0000	Reject H0
At most 1 *	0.484172	21.82842	15.49471	0.0049	Reject H0
At most 2 *	0.162700	4.616898	3.841466	0.0317	Reject H0
Unrestricted Co-integration Rank Test (Maximum Eigenvalue)					
Hypothesized No. of CE(s)	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical value**	**Prob.****	**Decision variable**
None *	0.688545	30.32903	21.13162	0.0019	Reject H_0
At most 1 *	0.484172	17.21152	14.26460	0.0166	Reject H_0
At most 2 *	0.162700	4.616898	3.841466	0.0317	Reject H_0

Source: Author's Computation, 2021.

From table 4.2, it can be inferred that all the co-integrating equation of the variables as the value of Trace statistics is less than the critical value at 5%. Therefore, we reject the null hypotheses of no co-integration equation, as such we can conclude that there is long run relationship (co-integration) between the independent variables (Exchange rate and Purchasing Power Parity) and the Market Capitalization (dependent variable).

4.2. Examination of the effect of Currency Devaluation on Capital market performance in Nigeria

Taking the analysis of the objective further, the study examined the effect of Currency Devaluation on Capital market Performance using the VAR Lag Order Selection Criteria. The akaike Information Criteria (AIC) was first used to determine the optimum lag length and the selected optimum lag was 1.

Table 3: Vector Error Correction model showing the relationship between Currency Devaluation and Capital market Performance

Variables	Co-efficient	T-statistics	Decision
LOGMKCAP	1.000000		
LOGEXR	-9.754499	-5.62902	Significant
LOGPPP	-84.56291	-4.79891	Significant
C	21.00574		
	SHORT RUN		
D(LOGMKCAP(-1))	-0.054123	-0.23448	Insignificant
D(LOGEXR(-1))	-0.084989	-0.55918	Insignificant
D(LOGPPP(-1))	-0.170539	-0.75314	Insignificant
C	0.105731	2.77462	
R-squared	0.271294		
Adj. R-squared	0.138801		

Based on Table 4.3 it can be seen that in the long run, LOGEXR has a negative but a significant effect on LOGMKCAP with a coefficient value of -9.754499 which indicates that a one percent increase in Real Exchange rate will induce a -9.754499 percent change in market Capitalization in the long run. This shows that an increase in the rate of real exchange diminishes stock market activities in Nigeria from 1986 - 2019. LOGPPP has a negative but a significant effect on LOGMKCAP with a coefficient value of -84.56291which indicates that a one percent increase in PPP will induce a -84.56291 percent change in market Capitalization in the long run. Coefficient values of R-squared and Adj. R-squared in the model is 0.271294 and 0.138801 which means that MKCAP variable in the 1989-2019 period can be explained by the EXR and PPP by 27% or 14%. While 49% or 36% are explained by other variables outside the model.

The effect of EXR on MKCAP in the short term is negative and insignificant with a coefficient value of -0.084989 which indicates that a one percent increase in Exchange rate will induce a -0.084989 percent change in market Capitalization in the short run. The results of the study also indicate that LOGPPP has a negative but insignificant effect on LOGMKCAP in the short run with a coefficient value of -0.170539 which indicates that a one percent increase in Exchange rate will induce a -0.170539 percent change in market Capitalization in the short run. Thus, the results of this study accept the hypothesis of the negative influence of EXR and PPP on MKCAP in Nigeria in the period 1989 -2019 both in the short and long term but a Significant effect in the long term and an Insignificant effect in the short term.

4.3. Examination of the effect of Market Capitalization, Exchange rate, and Purchasing Power Parity on GDP Growth Rate in Nigeria

Taking the analysis of the objective further, the study examined the effect of Currency Devaluation on Capital market Performance using the VAR Lag Order Selection Criteria. The akaike Information Criteria (AIC) was first used to determine the optimum lag length and the selected optimum lag was 1.

Table 4 Vector Error Correction model showing the long run relationship between Market Capitalization, Exchange rate, Purchasing Power Parity and GDP Growth Rate

Variables	Co-efficient	T-statistics	Decision
GDP_GR	1.000000		
LOGMKCAP	2.812340	0.85521	Insignificant
LOGEXR	15.77902	2.19671	Significant
LOGPPP	274.5324	6.31113	Significant
C	-61.56324		

	SHORT RUN		
D(GDP_GR(-1))	-0.268131	-1.35027	Insignificant
D(LMKCAP(-1))	-0.014764	-0.05985	Insignificant
D(LOGEXR(-1))	-0.277237	-1.77963	Insignificant
D(LOGPPP(-1))	-0.027012	-0.12008	Insignificant
C	-1.210355	-1.24266	
R-squared	0.232186		
Adj. R-squared	0.049373		

Based on Table 4 it can be seen that in the long run, LOGMKCAP has a positive but insignificant effect on GDP_GR with a coefficient value of 2.812340 which indicates that a one percent increase in LOGMKCAP will induce a 2.812340 percent increase in GDP_GR. LOGEXR has a positive and a significant effect on GDP_GR with a coefficient value of 15.77902 which indicates that a one percent increase in Exchange rate will induce a 15.77902 percent increase in Growth rate of GDP in the long run. This shows that an increase in the rate of real exchange boosts the GDP_GR in Nigeria from 1986 - 2019. LOGPPP has a positive and a significant effect on GDP_GR with a coefficient value of 274.5324 which indicates that a one percent increase in PPP will induce a 274.5324 percent increase in GDP_GR in the long run.

Coefficient values of R-squared and Adj. R-squared in the model is 0.232186 and 0.049373 which means that GDP_GR variable in the 1989-2019 period can be explained by the MKCAP, EXR and PPP by 23% or 4%. While 23% or 54% are explained by other variables outside the model. The effect of MKCAP on GDP_GR in the short term is negative and insignificant with a coefficient value of -0.014764 which indicates that a one percent increase in MKCAP will induce a -0.014764 percent change in market Capitalization in the short run. The results of the study also indicate that LOGEXR has a negative but insignificant effect on GDP_GR in the short run with a coefficient value of -0.277237 which indicates that a one percent increase in Exchange rate will induce a -0.277237 percent change in GDP_GR in the short run. LOGPPP is negative but has an insignificant effect on GDP_GR in the short run with a coefficient value of -0.027012 which indicates that a one percent increase in Purchasing Power Parity will induce a -0.027012 percent change in GDP_GR in the short run. Thus, the results of this study accept the hypothesis of the positive influence of EXR and PPP on GDP_GR and a negative influence of MKCAP on GDP_GR in Nigeria in the period 1989 -2019 in the long term.

4.4. Direction of Causality between Currency Devaluation and Capital Market Performance

Table 5 Result of Granger Causality Test

Pairwise Granger Causality Tests Sample: 1999 2019			
Null Hypothesis:	Obs.	F-Statistic	Prob.
LOGREXR does not Granger Cause LOGMKCAP	28	7.64925*	0.0101
LOGMKCAP does not Granger Cause LOGREXR		0.66698	0.4213
LOGPPP does not Granger Cause LOGMKCAP	28	3.46865	0.0743
LOGMKCAP does not Granger Cause LOGPPP		11.3785*	0.0024
LOGPPP does not Granger Cause LOGREXR	28	7.01496*	0.0138
LOGREXR does not Granger Cause LOGPPP		4.98787*	0.0347

*Significance at 5% level; **Source:** Author's Computation, 2021.

The focus is on the causal relationship between currency devaluation and capital market performance. The null hypothesis states that EXR does not granger cause MKCAP and MKCAP does not Granger cause EXR. The rule of thumb states that the probability of F-statistic must be less than 0.05 to show causal relationship. The probabilities for our causal variables market capitalization and exchange rate are 0.0101 and 0.4213. Therefore, we reject the null hypotheses and conclude that there is a unidirectional causality between currency devaluation and capital market performance in Nigeria during this period. However, market capitalization tends to Granger cause purchasing power parity showing that there is a unidirectional causality. purchasing power parity also Granger cause Exchange rate and Exchange rate also Granger cause Purchasing power parity. This means that there is s Bi-directional causality.

4.5. Direction of Causality between GDP_GR, MKCAP, EXR, PPP

Table 6 Result of Granger Causality Test

Pairwise Granger Causality Tests **Sample: 1999 2019**			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
LOG_MKCAP does not Granger Cause GDP_GR	28	0.08678	0.7706
GDP_GR does not Granger Cause LOG_MKCAP		0.00013	0.9911
LOG_EXR does not Granger Cause GDP_GR	28	0.47873	0.4949
GDP_GR does not Granger Cause LOG_EXR		0.11940	0.7324
LOG_PPP does not Granger Cause GDP_GR	28	0.75613	0.3928
GDP_GR does not Granger Cause LOG_PPP		3.60634	0.0692
LOG_EXR does not Granger Cause LOG_MKCAP	28	7.64925*	0.0101
LOG_MKCAP does not Granger Cause LOG_EXR		0.66698	0.4213
LOG_PPP does not Granger Cause LOG_MKCAP	28	3.46865	0.0743
LOG_MKCAP does not Granger Cause LOG_PPP		11.3785*	0.0024
LOG_PPP does not Granger Cause LOG_EXR	28	7.01496*	0.0138
LOG_EXR does not Granger Cause LOG_PPP		4.98787*	0.0347

*Significance at 5% level; **Source:** Author's Computation, 2021.

The focus is on the causal relationship between Gross Domestic Product, Currency Devaluation and Capital market performance. The null hypothesis states that LOG_MKCAP does not Granger Cause GDP_GR and GDP_GR does not Granger Cause LOG_MKCAP. The rule of thumb states that the probability of F-statistic must be less than 0.05 to show causal relationship. The probabilities for our causal variables Gross Domestic Product growth rate and Market Capitalization are 0.7706 and 0.9911. Therefore, we accept the null hypotheses and conclude that there is no directional causality between Gross Domestic Product growth rate and Market Capitalization in Nigeria. Exchange rate does not Granger cause Gross Domestic Product growth rate, this implies that there is no directional causality running from Exchange rate to Gross Domestic Product growth rate. Similarly, purchasing power parity does not Granger cause Gross Domestic Product growth rate, Market Capitalization does not Granger cause Exchange rate and Purchasing power parity does not Granger Cause Market Capitalization at 5% level of significance. However, Exchange rate tend to Granger cause market Capitalization and Purchasing Power Parity Granger Cause Exchange rate in Nigeria.

5. Conclusion

Based on the above findings, the following recommendations are hereby put forward: Firstly, Government should promote a healthy private sector partnership with the capital market in order to enhance the performance of the market. Nigerian Stock Exchange and the Securities and Exchange Commission should also ensure the free flow and adequate information in the market in order to attract more investors as well as increase new issues which will as well increase the market capitalization. There is also the need to restore confidence in the market through ensuring transparent and fair trading transactions and dealings in the stock market. Secondly, through the central bank, Government should implement monetary policy that will cause an upsurge in the level and size of market capitalization in the capital market. The policy should focus on the increase of money supply as this will stimulate the growth of the economy especially through increase in market capitalization. More foreign investors should be encouraged as well to participate in the market as this will improve the declining capital market performance.

Thirdly, financial hedging instruments are also required in order to reduce and limit the risk or negative effects of Currency volatility. The hedging instruments include, outright foreign exchange forward contract, Cross-currency interest rate swaps and Foreign exchange options. It should be efficient as well as not deform the normal functioning of the Nigerian Stock Exchange. The policymakers in government should also leverage on the exchange rate as a bait to

attract foreign portfolio investments. Finally, it is a necessity for policymakers to develop stronger reforms on currency devaluation in an economically sustainable way in order to avoid difficulty in attracting investors. Countries that have high foreign currency dominated debts should not undertake currency devaluation because this will have a contractionary effect. The financial sector of the economy also needs to be properly regulated as this will help reduce the resultant effect of currency devaluation.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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