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SOCIAL AND ECONOMIC DRIVERS OF STOCK MARKET PERFORMANCE IN NIGERIA

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ABSTRACT

The study examines the effect of the social and economic indicators on the stock market performance in Nigeria between 1981 and 2019. The study employs secondary data from the World Bank and Central Bank of Nigeria using the ordinary least squares as the technique of estimation. Findings show that regarding the economic drivers, interest rate, exchange rate, and inflation rate negatively impact the stock market while only income exerts a positive impact. However, both income and interest rate are significant economic drivers of stock performance. Regarding social drivers, life expectancy, poverty, and population exert a positive impact on stock performance. Similarly, both life expectancy and population are significant social drivers of stock market performance in Nigeria. The study recommends that monetary authorities should be cautious in avoiding discretionary policies that might hike the exchange rate; otherwise, the flow of funds to the stock market will be derailed. Also, the fiscal authority should invest massively in safety nets programmes to enhance the capacity of the growing population and reduce poverty.

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INTRODUCTION

The economy comprises of interrelated components that interact with each other to drive growth and development. The smooth operations of these interrelated sectors are due to financial institutions' development, given the inevitability of funds in driving economic activities. This underpins the vital role of the stock market. Stock market activities are a formidable yardstick in measuring the level of economic progress in both emerged and emerging economies (Osisanwo and Atanda, 2012; Mesagan and Bello, 2018; Mesagan, 2021). This is with no doubt that the pivotal responsibility of the market is to mobilize the savings of the surplus economic units and allocate such for the purpose of investment and enhancing appropriate platform to engender best corporate practice with the motive to spur investment and consequently translate to high economic output and prosperity. Empirical evidence abounds that support stock market performance-led growth in literature. These include; Liu and Sinclairb (2008), Oskooe (2010), Okodua and Ewetan (2013), Prats and Sandoval (2016), and Pradhan et al. (2020). While Ruyong (1999), Harris (1997), and Carp (2012) argued on the contrary as to the position of stock market performance led growth.

In spite of the discussion about the stock market's performance, which has received scholarly attention in the literature, the drivers of stock market performance remain of

major concern. With this in mind, studies such as Osisanwo and Atanda (2012), Patel (2012), as well as Hajilee and Nasser (2014) empirically affirmed that exchange rate, inflation rate, money supply, and gross domestic product are the macroeconomic indicators, which influence stock market performance. However, while some of the studies on stock market performance have been able to identify the economic indicators, it is imperative to account for the social indicators too. As revealed in a study by Mesagan and Ezeji (2016), some social drivers that can significantly affect important sectors in an economy include the likes of poverty rate, life expectancy rate, population density and unemployment rate. It is therefore important to ask if such social indicators can play significant roles in stimulating stock performance in Nigeria? Or better still, when they are combined with economic indicators, what sort of impact can the social drivers exert on Nigeria's stock market performance? These and some other pertinent questions are addressed in this study with the aim of recommending appropriate policies to boost the stock market performance via the significant social and economic drivers. As noted in Isola and Mesagan (2016) and Akinmade et al. (2020), like the other emerging economies, the Nigerian Stock Market (NSE) has not optimally harnessed the opportunity of driving economic expansion owing to the multifaceted

challenges ranging from unethical and sharp trading practices. Some other studies have also alluded to the fact that the country's stock market performance has been hindered by factors such as insider trade, illegal sales of stocks and trade manipulations, poor structure and governance coupled with the global financial crisis, and lack of market efficiency emanating from inadequate information (Mesagan and Amadi, 2017; Mesagan et al., 2019; Ogbuji et al., 2020; Yusuf et al., 2020). Nevertheless, all is not about doom and gloom as the country's stock market is still finding its feet among other developing nations. For instance, the annual market capitalization of the NSE has exhibited an upward-downward movement in the last three decades. Evidence from CBN (2020) reveals that in terms of market capitalisation, the NSE has maintained a stable upward trend between the period of 2016 to 2019. Data shows that in 2016, the market capitalization value stood at about N16.185.73bn, which then rose to N21,128.90bn in 2017. This was later boosted to about N21,904.04bn and N25,890.22bn in 2018 and 2019, respectively (CBN, 2020). The implication is that the country's stock market has what it takes to maintain strong performance going forward if all the economic and social indicators of development are well harnessed in the country. Thus, this provides the main essence of the study for the Nigerian stock market.

In terms of the empirical literature, efforts have been made to show the determinant of stock market performance for both developed and developing nations. For instance, Garza-García and Yu (2010) conducted a similar study for China using monthly observations (January 1992 to December 2008). The result revealed that stock market performance reacts to the variations in macroeconomic variables. Osisanwo and Atanda (2012) agreed that macroeconomic variables in their model (interest rate, lag of stock return, and money supply) determine stock market performance with interest rate exhibiting an inverse linkage with stock performance. In the same vein, Osamwonyi and Evbayiro-Osagie (2012) showed that from the period of 1975 to 2005, Nigeria stock market varied significantly owing to variations in interest rates, inflation rates, exchange rates, fiscal deficit, GDP, and money supply. Asongu (2012) found a strong positive association between the quality institution and stock performance in 14 African Countries using panel data spanning from 1990 to 2010. Similarly, Patel (2012), which used the Vector Error Correction Model and Granger Causality approach on monthly time series between January 1991 to December 2010, confirmed a significant linkage between macroeconomic variables and stock market performance in India.

Furthermore, Hajilee and Nasser (2014) focused on twelve (12) emerging economies between the period of 1980 to 2010 using the bound cointegration approach. Evidence revealed that the exchange rate impacts stock performance significantly for the majority of the countries in the short and long-run. Jahur et al. (2014) carried out the study for Bangladesh from 1986 to 2012 using the Ordinary Least Squares method of data analysis and found that under the period of study, stock performance changes significantly as a consumer price index, interest rate, exchange rate changes. Ibrahim and Musah (2014) evidence from Ghana departs from others as their study revealed a condition of no prediction between

macroeconomic indicators and stock performance using quarterly time series between 2000 to 2010. In the same manner, Ayadi et al. (2015), focusing on gender inclusion, used Nigeria data from the period of 1980 to 2011 to analyze similar study. The study supports the argument that macroeconomic factors constitute what drives stock performance in Nigeria. However, the study further revealed that gender diversification is not a significant factor in driving stock market performance.

Moreover, Manasseh et al. (2017) conducted a similar study for Nigeria utilizing the Autoregressive Distributed Lag Model (ARDL) method of analysis for the period of 1986 to 2013. Empirical result affirms the existence of long-run and significant nexus between stock market performance and institutional quality. Tsaurai (2018) extended the study to twenty-three (23) emerging economies with data covering 1994 to 2014. Evidence shows a direct linkage between stock performance and macroeconomic indicators (foreign direct investment, economic growth, infrastructural development, savings, inflation, trade openness, exchange rates, banking sector development and stock market liquidity). Igoni et al. (2020) employed periodic data from 1985 to 2014 and found the gross domestic product to be positively and significantly related to stock performance in Nigeria. At the same time, interest rate exhibits a negative influence on stock market performance. Lastly, recent studies from both Goh et al. (2021) and Shi et al. (2021) are also considered. Goh et al. (2021) analysed stock drivers in the era of Covid-19 pandemic in Indonesia. It was observed that both exchange rate and interest rate are culpable factors of stock performance as they both significantly impacted the Indian stock market. Similarly, Shi et al. (2021) beamed searchlight on some ASEAN nations while considering the crucial institutional role in the model. The study revealed that the legal system and other institutional freedom variables like trade freedom, sound money, government size, and regulation are critical drivers of the stock market performance.

From the above reviewed empirical evidence, most studies focused on the economic drivers of the stock market with little evidence on whether social drivers such as Population density, life expectancy rate, poverty rate have a significant influence on stock market performance. The novelty of this study is to find out if social and economic factors drive stock performance in Nigeria. This is the research gap filled in this study. Therefore, due to the key role often played by the stock market in stimulating investment and the industrial sector in any nation, this study is important. Also, consequent on the fact that all hands must be on deck in enhancing performance, this study ascertains the economic and social determinants of stock market performance in Nigeria. Specifically, it examines the effect of economic indicators on stock market performance in Nigeria. It determines the impact of social indicators on stock market performance in Nigeria. It then ascertains which of the social and economic indicators significantly drive the performance of the stock market in Nigeria. The novelty of this study is informed by its attempt to link social drivers to the performance of the stock market in Nigeria as opposed to the generic economic drivers of stock performance that are often analysed in the literature.

METHODOLOGY

This present model follows the model of Tsaurai (2018), which is then modified by including social factors such as poverty rate, population density and life expectancy rate, in a quest to examine the effect of social and economic drivers on stock performance in Nigeria. Also, the stock market performance is proxied with stock market capitalization, while economic drivers are captured with the exchange rate, inflation rate and interest rate. Lastly, the social drivers are proxied with the poverty rate, population density and life expectancy rate. Hence, we specify equations (1) to (3) in terms of the specific objectives of the study.

$$MCAP = \alpha_0 + \alpha_1 EXP + \alpha_2 INF + \alpha_3 GDP + \alpha_4 INT + \varepsilon \quad (1)$$

Equation (1) is used to capture the impact of economic indicators on stock market performance in Nigeria. Where market capitalisation (MCAP) is the proxy for stock market performance while EXR, INF, GDP and INT represent the exchange rate, inflation rate, income, and interest rate respectively. Also, α_0 is the intercept term, $\alpha_1 \dots \alpha_4$ are the parameter estimates while ε is the residual term.

$$MCAP = \beta_0 + \beta_1 POV + \beta_2 POP + \beta_3 LIF + \beta_4 GDP + \varepsilon \quad (2)$$

Equation (2) is used to capture the effect of social indicators on stock market performance in Nigeria. Where market capitalisation (MCAP) is the proxy for stock market performance while POV, POP and LIF and represent the poverty rate, population density and life expectancy rate respectively, while income (GDP) is used as a control variable. Also, β_0 is the intercept term, $\beta_1 \dots \beta_4$ are the parameter estimates while ε is the residual term.

$$MCAP = \delta_0 + \delta_1 EXR + \delta_2 INF + \delta_3 GDP + \delta_4 INT + \delta_5 POV + \delta_6 POP + \delta_7 LIF + \delta_8 GDP + \varepsilon \quad (3)$$

Equation (3) is used to capture the joint impacts of economic and social indicators on stock market performance in Nigeria. All the variables remain as earlier explained while δ_0 is the new intercept. Again, $\delta_1 \dots \delta_8$ are the various parameter estimates and ε is the residual term.

In conducting this study, secondary data on social and economic indicators are sourced from the statistical bulletins of the Central Bank of Nigeria (CBN, 2020) and the World Development Indicators (WDI, 2020). The data covered the period of 1981 to 2019. With the objective(s) of the study in mind, the Ordinary Least Squares (OLS) technique is utilized to analyse the impact of social and economic drivers on stock performance in Nigeria. The OLS is employed owing to its simplicity in estimation. Also, as noted in Bhattacharyya (2019), the OLS is more efficient in generating consistent estimates especially in the presence of nonstationary but cointegrated regressors as revealed in Tables 1 and 2. Also, pre-estimation and post-estimation tests such as unit root, cointegration and Durbin Watson (DW) are conducted to ensure that our analysis is in tandem with time series properties to prevent nonsensical results.

RESULTS AND DISCUSSION

A detailed analysis of the empirical results using E-views 9 is discussed in this section starting with the unit root tests in Table 1. Unit root result is generated using Augmented Dickey Fuller (ADF). The ADF result shows that market capitalization (MCAP), interest rate (INT), exchange rate (EXR), inflation rate (INF), gross domestic product (GDP), poverty (POV), population (POP) and life expectancy (LIF) are stationary at I(1) at 0.01 and 0.05 significance levels, which means there is a unit root. This indicates that those incorporated series in the dynamic regression model have no unit-root at first difference with the implication that the series (in their first difference) are mean reverting and convergences towards their long-run equilibrium.

Table 1. Stationarity test.

Variables	Levels			First Difference			Order of integration
	ADF Stat.	0.01	0.05	ADF Stat.	0.01	0.05	
MCAP	-0.4817	-3.6329	-2.9484	-4.3755	-3.6394*	-2.9511**	I(1)
INT	-2.3191	-3.6702	-2.9639	-3.7163	-3.6793*	-2.9677**	I(1)
EXR	1.3111	-3.6329	-2.9484	-3.6685	-3.6394*	-2.9511**	I(1)
INF	-2.8165	-3.6329	-2.9484	-5.4164	-3.6394*	-2.9511**	I(1)
POP	-2.3674	-3.6616	-2.9604	-4.2384	-3.6793*	-2.9677**	I(1)
POV	-1.4901	-3.6394	-2.9511	-7.7326	-3.6394*	-2.9511**	I(1)
GDP	-0.6439	-3.6329	-2.9484	-3.0868	-3.6394	-2.9511**	I(1)
LIF	-0.5882	-3.6537	-2.9571	-3.9180	-3.6463*	-2.9540**	I(1)

Note: * significant at 0.01, ** significant at 0.05.

Source: Authors' compilation.

To test for the existence of long-run equilibrium, the Johansen co-integration test is presented in Tables 2 and 3. Table 2 shows the possibility of the variables to converge towards their long-run equilibrium or not via Trace test, while Table 3 is based on the maximum Eigen test.

The Trace test in Table 2 shows that the null hypothesis of no co-integrating vector is rejected at 0.05 significance level. This implies that there are four cointegrating equations among the regressors. Hence, we confirm a long-run equilibrium relationship among variables that are

considered, that is, market capitalization, interest rate, exchange rate, inflation rate, gross domestic product,

poverty rate, population density, and life expectancy in Nigeria 1981 and 2019.

Table 2. Trace test.

No. of cointegrating regressors	Trace Test	5% level	Probability
None *	354.633	159.139	0.0000
At most 1 *	230.927	125.428	0.0000
At most 2 *	160.279	98.7536	0.0000
At most 3 *	107.120	67.8188	0.0000
At most 4	47.7500	59.8561	0.0726
At most 5	29.6123	32.7970	0.0931
At most 6	10.1883	15.4947	0.2665
At most 7	2.19970	3.8414	0.1380

*, means reject null hypothesis at 5% level

Source: Author's compilation.

The output of the max-eigen value presented in Table 3 above shows that the null hypothesis of no cointegrating vector is rejected at 0.05 significance level since there are three cointegrating equations. This implies that there are three cointegrating equations among the regressors. Hence, we confirm the existence of long-run equilibrium

among variables of Market capitalization, interest rate, exchange rate, inflation rate, gross domestic product, poverty, population, and life expectancy in Nigeria between 1981 and 2019. Furthermore, the empirical result is presented in line with specific objectives as specified in section 1.

Table 3. Max-Eigenvalue Test.

No. of cointegrating regressors	Trace Test	5% level	Probability
None *	123.7062	58.3626	0.0000
At most 1 *	70.6482	45.2314	0.0000
At most 2 *	53.1584	39.0775	0.0010
At most 3	33.3702	37.8768	0.0627
At most 4	27.1376	27.5843	0.0869
At most 5	21.424	22.1316	0.0927
At most 6	7.9886	14.2646	0.3799
At most 7	2.1997	3.8414	0.1380

*, means reject null hypothesis at 5% level

Source: Author's compilation.

As shown in Table 4 for model I, exchange rate has an inverse and insignificant effect on stock performance in Nigeria. This denotes that if other explanatory variables are held constant, a percentage rise in exchange rate causes the stock market capitalisation to decline by about 0.15%. The implication of this is that exchange rate depreciation brings a negative movement to stock market performance in Nigeria. It thus means that the Nigerian stock market is at a serious risk whenever the exchange rate depreciates in the country, but when it appreciates, it is favourable to the stock market. This is in tandem with the findings of Jahur et al (2014), Osisanwo and Atanda (2012), and Isola and Mesagan (2018). The finding is also in consonance with theory as foreign investors especially are very alert to happenings in the exchange rate market before taking any investment decisions. Hence, whenever exchange rate fluctuates, foreign investors are at risk of losing returns and hence, they swiftly move their investments away to another much stable market. This informs why exchange rate negatively impacts the performance of the market. Concerning inflation rate, the result confirms a negative and insignificant linkage between inflation and stock market capitalisation. A percentage

increase in inflation rate will cause the market capitalisation to decline by about 0.27% while keeping constant all the other explanatory variables. The interpretation is that persistent increases in the general price level reduce the stock market performance. This is in conformity with theory and consistent with the findings of Tsauroi (2018) and Igoni et al (2020). The reason is that as prices are increasing, the local economy shrinks because aggregate demand falls, and thus negatively affects the volume of investment into the stock market. From the result, interest rate exhibits a negative and significant effect on stock market capitalisation. One percent rise in interest rate causes the market capitalisation to rise by about 3.0% while keeping constant all the other explanatory variables. It implies that higher the rate interest the lower the stock market performance because investment falls and it negatively affects the stock market. This supports the findings of Osamwonyi and Evbayiro-Osagie (2012) and Tsauroi (2018).

From Model II, Table 4 reveals that poverty positively and insignificantly impacts stock market performance in Nigeria when all the other explanatory variables are held constant. One percentage increase in poverty will cause the stock

market capitalisation to rise by about 0.12%. The implication is that the poverty level encourages the citizens to invest in the stock market to hedge against future contingencies. Concerning population growth, the result confirms that population is positively and significantly related to stock market capitalisation as one percent increase in population growth causes the market capitalisation to rise by about 5.5% while keeping constant all the other explanatory variables. This denotes that rapid population increases in the country

provide the needed impetus to drive the stock market. In the same vein, life expectancy exerts a positive and significant impact on market capitalisation 1% increase in life expectancy causes the market capitalisation to rise by about 7.42%. This follows once people are sure that they will live long, they sacrifice present consumption for future consumption by investing in the stock market. The result is in tune with Olunkwa et al. (2021), which posits that healthy population help propel investment in Nigeria.

Table 4. Economic and social drivers of stock market performance result output.

Variables	I	II	III
C	-4.9776*** (0.3105)	63.7801** (32.749)	43.9472 (40.312)
EXR	-0.0015 (0.0016)	-	-0.0024 (0.0018)
INF	-0.0027 (0.0027)	-	-0.0034 (0.0026)
INT	-0.0303*** (0.0097)	-	-0.0057** (0.0122)
GDP	1.3703*** (0.0511)	1.8229*** (0.2363)	1.7530*** (0.2672)
POV	-	0.1218 (0.3103)	0.1502 (0.3564)
POP	-	5.5318*** (2.3003)	4.2534* (2.8120)
LIF	-	7.4292*** (3.0121)	6.6033* (3.5483)
R-Squared	0.9943	0.9950	0.9957
Adj. R-squared	0.9936	0.9944	0.9946
Durbin-Watson	1.8165	1.8692	2.1136
F-statistic	1367.329***	1573.580***	929.3357***

Dependent variable: Stock Market Capitalisation (MCAP).

Note: ***, ** and * indicate 0.01, 0.05 and 0.10 level of significance and standard error are in ().

From Model III, Table 4 shows that all the independent variables retained their signs in consonance with Models I and II. This implies that the result of this study is robust. In summary, the result suggests that poverty, population, the gross domestic product and life expectancy have direct impacts on stock market performance. Whereas, exchange rate, interest rate, and inflation rate have adverse impacts on stock performance in Nigeria. It thus follows that all the social drivers have a positive effect on stock performance while all the economic drivers, except gross domestic product, have negative effect on stock performance in Nigeria. Again, the result confirms that GDP in models I, II and III, exhibits a positive and significant relationship with stock market performance. One percent increase in the GDP causes the market capitalisation to rise by about 137%, 182% and 175% respectively, while keeping constant all the other explanatory variables. The interpretation is that output growth promotes the stock market performance. This is in conformity with theory and consistent with the results of Tsaurai (2018), and Mesagan et al. (2018). The reason is that as GDP increases, aggregate demand improves and trade volume in the stock market increases as well. In terms of the suitability of the models, all the models are not spurious and are strong

predictors of stock performance in Nigeria. The adjusted R-squared values show that after removing the effects of insignificant regressors, the models explain about 99.3%, 99.4% and 99.5% changes respectively in the explanatory variables. Also, the Durbin-Watson of 1.81, 1.86 and 2.11 suggest no serial correlation in the model, while the F statistics show that the regressors are linearly related to the regressand in the respective models since it is significant at 1%. Hence, denotes that the models are well specified.

CONCLUSIONS

This study used secondary data sourced from the CBN statistical bulletin and World Development Indicators (2020), respectively. The Ordinary Least Squares estimation technique was used to analyse the data and it was revealed that exchange rate, inflation rate and interest rate are negatively related to stock market capitalisation. However, they are not statistically significant. Gross domestic product has a positive and significant effect on the stock market performance in Nigeria. In the same regard, social drivers which include; population, poverty and life expectancy have positive effect on stock market capitalisation in Nigeria. Therefore, the study concludes that economic drivers, except

the gross domestic product, have an inverse relationship with stock market capitalisation in Nigeria while the social drivers have a direct effect on the stock market capitalisation in Nigeria over the period of study.

Owing to the necessity of the role of the stock market in mobilizing funds from the surplus economic units to the deficit economic units for investment reasons with the aim of increasing output and thus enhancing economic expansion and happiness, this implies that the wellness of the stock market should be of concern. For the stock market to achieve its goals, the study suggests that monetary authorities should be cautious enough to avoid discretionary policies that might hike the exchange rate; otherwise, the flow of funds to the stock market will be derailed. Also, interest rate should be fixed with the intention to encourage portfolio investors without discouraging investment in the stock of physical capital. In the same regard, the government should formulate and implement policies that can enhance the performance of the stock market so as to reduce the pressure in the banking sector in terms of raising funds from the stock market. In addition, the fiscal authorities should revitalize social programmes that will improve the citizen's health and longevity to boost life expectancy. Lastly, the government should invest massively in safety nets programmes to enhance the capacity of the growing population and reduce poverty.

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