



MACROECONOMIC VARIABLES AND STOCK PRICES IN NIGERIA

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Abstract

Macroeconomic variables' impact on NGX stock prices is studied. The All-Share Index was used as proxy for stock prices whereas the Gross Domestic Product growth, interest rate spread, oil prices, inflation, and broad money growth are the determinants of the economy. This study utilizes the theoretical framework of the Arbitrage Pricing Theory, which is predicated on the concept that macroeconomic conditions have an effect on the pricing of securities. Under this premise, the study analyzes the impact of the aforementioned macroeconomic variables on NGX stock prices. Stock prices on the NGX are found to be cointegrated with these macroeconomic parameters using an autoregressive distributed lag (ARDL) bounds test. Due to the long-term dependence of the variables, the vector error correction model was used to assess the impact of the connection. Based on the findings of this study, NGX stock prices tend to fall as inflation, oil prices, and overall money growth all rise. However, it also finds a positive correlation between the interest rate spread and NGX stock prices, an understudied component of the Nigerian economy. It also finds that the interest rate spread is correlated with stock prices. This empirical study also yields conflicting findings. Based on the findings, the Federal Government of Nigeria is urged to take measures to rein in inflation and ensure steady prices. More investigation of interest rate spread and its effects in Nigeria is recommended in the paper.

Background to the study

Investors and lenders alike rely heavily on the stock market. It makes it easier for the surplus units of the economy to invest in the deficit units of the economy. According to Mankiw (2013), the stock market index may be used as a leading economic indicator to learn about the state of the economy as a whole. According to this theory, the characteristics of an efficient stock market include the fact that it consolidates all accessible data on stock prices (Fama, 1965). As the Nigerian stock market develops, the Nigerian Stock Exchange has morphed into the Nigerian Exchange Group. It originated in the third quarter of 1960, when the Lagos State Exchange first opened for business. The demutualization proceedings for the Nigerian Stock Exchange (now the Nigerian Exchange) were finalized in March 2021, transforming it from a government-owned organization to a shareholder-owned, for-profit business. When it comes to listing and trading stocks and other assets, the Nigerian

Exchange (NGX) is the premier venue in Africa. If your business or investment portfolio is interested in trading stocks in Nigeria, this can help you get started. Stock prices in any economy can be affected by feedback from the aggregate economy's effect on the stock market. If stock prices are rising, it might be because investors are anticipating substantial economic growth. Conversely, if stock values are falling, it may be because investors are anticipating an economic downturn (Mankiw, 2013). Investment policies can benefit from a better understanding of the connections between macroeconomic conditions and stock prices. It's possible that these regulations will help the stock market expand and prosper. By understanding these connections, investors will have a better idea of what could affect their investment results. Researchers are interested in the connections between stock prices and macroeconomic factors because of this. One key issue is whether or not stock prices are determined by underlying macroeconomic factors.

Existing research on the connection between macroeconomic factors and stock prices has employed a variety of paradigms. The findings from these investigations vary widely from one country to the next. The arbitrage pricing theory (APT) is one of the theoretical frameworks that has been employed in a large number of empirical investigations to determine the many macroeconomic variables that affect stock prices (Ross and Roll, 1984). The macroeconomic study points to a large variety of potential macroeconomic causes. According to Arodoye (2012), there was a sizable body of work that examined these connections. In the framework of the capital asset pricing model (CAPM), some of the literature favors the usage of a certain element. Many other works employ a multi-factor approach in the same vein as the APT. Stock prices can be affected by a number of different factors (macroeconomic variables), according to the APT. Macroeconomic factors such as GDP, interest rates, inflation, the price of crude oil, and the money supply are recognized. The unemployment rate and foreign direct investment are two more.

Numerous research have been done in Nigeria to investigate the connection between macroeconomic factors and stock prices. Ahmad et al. (2015), Nkechukwu, Oneagba, and Okoh (2015), and Josiah and Akpoveta (2019) are just a few prominent instances. There is currently no consensus on the results of these empirical research. Many explanations are offered for the varying results. Variations in approach, selection of macroeconomic variables, and model specification can all play a role in this. This investigation, however, zeroes in on how five macroeconomic variables affect NGX stock prices. The goal of this research is to advance previous empirical investigations by making use of the most recent information. Existing research in this field in Nigeria up to the time of this study fails to incorporate interest rate dispersion among the macroeconomic factors. Because of this, empirical research analyzing the effect of macroeconomic factors on stock prices will yield contradictory results. The current investigation is motivated by a desire to find solutions to the following questions: Can stock values be affected by changes in the economy as a whole? Do changes in macroeconomic factors have any influence on stock prices, either temporarily or permanently? Can stock prices be explained by changes in macroeconomic variables?

Using yearly data from 1985 to 2022, this study will analyze the effect of macroeconomic factors on NGX stock prices in an effort to shed light on these concerns. The NGX all-share index, which is used as a stand-in for the exchange's stock prices, began collecting data in 1985 and will do so until 2019. Growth in gross domestic product, inflation measured indirectly through

the consumer price index, and interest rates are among the five macroeconomic variables considered as independent variables in this analysis. Inflation, oil prices, and the spread between interest rates. Stock prices may be affected by the aforementioned macroeconomic variables, as common sense would predict. All of the information used in the analysis comes from the World Bank's Development Indicators and the Central Bank of Nigeria.

Literature Review

Stock prices and other macroeconomic indicators are analyzed in this chapter, along with a literature assessment of the relevant topics. The study's theoretical underpinnings are laid forth first. Following this, the empirical literature on the effects of macroeconomic factors on stock prices is reviewed. There is a summary of the chapter's contents at the conclusion.

Theoretical Literature

It has been widely acknowledged that the capital asset pricing model (CAPM) is a reliable tool for analyzing securities prices in the financial sector (Hillier et al., 2013; Elbanam, 2014). However, as a one-factor model, it has significant limitations, which is why Ross' multi-factor theory (arbitrage pricing theory) emerged (Bodie, Kane, & Marcus, 2018). The APT contends that the prices of securities may be affected by a number of other factors, including macroeconomic issues. However, the theory fails to specify which of these factors influence the pricing of securities. The core tenet of APT is the belief that macroeconomic factors that influence securities risk may be used to predict future returns on investment in those securities.

Many empirical studies have been conducted on the APT strategy, with conflicting results. The APT's biggest weakness is that it can't pinpoint the specific macroeconomic variables that have an impact on the value of a security (French, 2017). This, according to French (2017), allows for the random selection and empirical testing of various macroeconomic factors, which in turn may account for the varying results. The APT may still be seen as a different framework to experimentally investigate the connections between macroeconomic factors and securities prices, despite the contradictory results. As a result, this undermines the central argument of this research, which examines how changes in macroeconomic factors affect NGX stock prices. The next part provides a summary of research that has looked at how various macroeconomic variables have affected stock prices.

Empirical Literature

By understanding how various economic actors rely on the economy as a whole, it may be possible to get

insight into the connections between them. The effect of these connections on stock values, however, might be either good or negative. However, the duration of this effect is unclear. To what extent may broad economic conditions impact stock market performance? In this part, we will examine empirical research that has looked at how various macroeconomic variables have affected stock prices.

Abraham (2011) looked at how GDP, inflation, interest rates, and the stock market all interacted with one another. Inflation was revealed to have a negative relationship with the stock market in the short-run in Nigeria using a two-step error correction model. Adaramola (2011) used a Generalized Least Squares model to determine that GDP and oil prices positively impacted stock prices. Using a sectoral approach, Prince and Ibrahim (2011) discovered that none of the macroeconomic factors significantly affected the returns of enterprises across sectors. The research by Cyprian (2017) corroborates this conclusion. Ordinary Least Squares (OLS) analysis conducted by Daferighe and Charlie (2012), on the other hand, indicated that inflation negatively correlated with stock market returns. John (2019) discovered that money supply significantly positively impacted stock market performance in another OLS technique that included testing of unit root and cointegration. The research also discovered a one-way causality connecting the money supply and the stock market. Using a pooled regression method, Adekunle, Alalade, and Okulenu (2016) discovered that Nigeria's inflation rate had no discernible impact on the development of the country's financial markets.

Using the VAR model, Arodoye (2012) determined that the real growth rate of GDP, inflation, and stock prices all have both short-run and long-run correlations with one another. The crude oil price has a negative correlation with Ghanaian stock prices, according to research by Kuwornu (2012). In order to learn how stock market volatility is related to macroeconomic factors, Osazee and Nosakhare (2014) employed the GARCH model. Stock market fluctuations in Nigeria were attributed mostly to inflation. When it comes to understanding the volatility of stock market returns in Nigeria, however, Sokpo, Iorember, and Usar (2017) argued that CPI inflation was not a relevant macroeconomic indicator. However, Osazee and Nosakhare's (2014) conclusions were backed up by research undertaken by Izunobi et al. (2019) and Okonkwo (2019). Short-term stock returns were found to be negatively correlated with inflation by Chude, Ifurueze, and Chude (2015). Stock market returns in Nigeria were shown to be positively correlated with GDP growth. The GDP has a strong negative influence on stock prices in the long run, according to research by Nkechukwu, Onyeagba, and Okoh (2015). They

also found that the overall money supply significantly boosted stock values over the long term.

New empirical proof from Ahmad et al. (2015), who studied the connection between Nigeria's stock market growth and macroeconomic factors over the long and short term. The CPI and oil price were found to have a substantial, favorable effect on the growth of stocks. Money supply was also shown to have a detrimental effect on the growth of the Nigerian stock market. Ahmad, Abdullahi, Sulong, and Abdullahi (2015) used the ARDL and VAR model to do research that is closely connected to this one. The research demonstrated a two-way causation between the growth of the money supply and the performance of stock markets. They also discovered that the GDP and stock returns were not causally related to one another. In their research, Mbah, Okoli, and Amassoma (2017) discovered a consistent long-run connection between the ASI and macroeconomic indicators. Using an error correction model, Harcourt (2017) discovered that real GDP has a favorable effect on stock market performance. He said that the performance of the Nigerian stock market has suffered as a result of the inflation. According to research by Udoka, Mfon, and Basse (2018), long-term connections between macroeconomic factors and stock price changes in Nigeria do not exist.

In addition, Josiah and Akpoeta (2019) discovered a favorable correlation between the growth of the money supply and the performance of the Nigerian stock market. They also showed a favorable correlation between real GDP and stock market performance. The inflation rate has a detrimental impact on stock performance in Nigeria, as found by Okereke and Amusa (2020). The real GDP was also found to have a beneficial influence on stock performance, according to the study. In addition, the study discovered a correlation between Nigerian stock market performance and macroeconomic factors over the course of several years. The ARDL methodology employed by Aremo, Olabisi, and Adeboye (2020) revealed a long-term beneficial influence of the money supply on stock market returns in Nigeria. In a similar vein, Pole and Cavusoglu (2021) discovered that the monetary base significantly influenced the volatility of Nigerian stock returns. Inflation was also shown to have a detrimental influence on the volatility of stock returns in Nigeria.

Methodology

The data and variables utilized in this analysis are described and their inclusion is justified in this chapter. It also details the methodology and econometric techniques used in this study. There is a summary of the chapter's contents at the conclusion.

Data and Variables Description

It has already been established that the APT framework does not adequately explain the macroeconomic variables that influence stock prices. The increase of the gross domestic product, the rate of inflation, the spread between interest rates, the price of oil, and the expansion of broad money are all factors that are expected to impact stock values according to economic theory. With this as our starting point, we looked at annual data for NGX stock prices between 1985 and 2019 to see how these variables affected the value of the stock. Since the Nigerian stock market started keeping records for its all-share index in 1985, that year marks the beginning and end of the study's time period. The all-share index (ASI) stood in for the stock market, whereas the aforementioned five macroeconomic indicators were the explanatory variables. We thank the World Bank's Development Indicators and the Nigerian Central Bank for providing the data for this study. Converting the ASI and oil prices to natural logarithms did away with heteroscedasticity.

Model Specification

The model's estimated variables consist of the Natural Logarithm of All-Share Index (LNASI), Gross Domestic Product Growth (GDPR), Inflation Rate (INF), Interest Rate Spread (IRS), Natural Logarithm Equation (1) can be written as follows:

$$LNASI_t = f(GDPR_t, INF_t, IRS_t, LNOILP_t, M2_t) \dots \dots \dots 1$$

Where:

LNASI stands for the Natural Logarithm of All-Share Index.

GDPR refers to Gross Domestic Product Growth.

INF represents the Inflation Rate.

Equation (2) is as follows:

$$\Delta = 0 + 1 + -1 + \sum = 0 \quad 1\Delta \quad -1 + \dots \dots \dots (2)$$

LNASI, GDPR, INF, IRS, LNOILP, and M2 are all represented by X in this analysis. When k is the lag duration, t is the time or trend variable, and t is a pure white noise error term. When = 0, the null hypothesis is

The ASI is a market-wide metric that measures returns and price movements in the stock market. The value of all final goods and services produced inside a country during a certain time period is known as the GDP. In this case, we used the GDP growth rate as our metric of choice. Inflation rates are calculated annually using the CPI. Money lost due to a difference between a bank's lending rate (interest charged on loans) and its deposit rate (interest paid on demand and other deposits) is referred to as the interest rate spread. Studies by Haruna (2012), Kiptui (2014), and Sheriff and Amoako (2014) all find that wide interest rate spreads are associated with higher levels of economic activity. The stock market could be getting a boost from this. When interest rate differentials are quite small, the stock market, on the other hand, tends to decline. This is because it is indicative of an economic slowdown. The price of oil is another major factor considered. The oil prices are the fluctuating prices at which Nigeria exports crude oil, which can have an impact on the value of a company's shares. Since Nigeria relies heavily on exports to fund its economy (Adaramola, 2011; Ahmad et al., 2015), this variable was taken into account. The broad money supply is a leading macroeconomic indicator since it is a potential source of inflation and the stock market responds to changes in this indicator.

of Oil Prices (LNOILP), and Broad Money Supply Growth (M2). The functional relationship among these variables is represented by equation (1) for the purpose of conducting econometric analysis.

IRS indicates the Interest Rate Spread.

LNOILP is the Natural Logarithm of Oil Prices.

M2 stands for Broad Money Supply Growth.

The modeling process followed standard econometric steps. Firstly, a stationarity test (unit root test) was conducted using the Augmented Dickey-Fuller (ADF) test (1979), as shown in equation (2), to determine the stationary nature of the data. The results of this test influenced the selection of the cointegration approach used in the study.

confirmed and a unit root exists. Since the alternative hypothesis predicts that the time series is stationary when = 0, this result suggests that the series is non-stationary.

Second, we looked for a long-term correlation by doing a cointegration test. The ADF Test result was utilized to determine the order of integration of the variables, and ARDL cointegration was applied as a consequence. The equation (3) captures the joint short-run and long-

$$\Delta Y_t = 1 + \sum_{i=1}^6 \alpha_i \Delta Y_{t-i} - 1 + \sum_{i=1}^6 \beta_i \Delta X_{t-i} - 1 + \sum_{i=1}^6 \gamma_i \Delta Z_{t-i} - 1 + \sum_{i=1}^6 \delta_i \Delta W_{t-i} - 1 + \sum_{i=1}^6 \epsilon_i \Delta V_{t-i} - 1 + \sum_{i=1}^6 \zeta_i \Delta U_{t-i} + 2 - 1 + 3 - 1 + 4 - 1 + 5 - 1 + 6 - 1 \dots \dots \dots (3)$$

run model that was used to simulate ARDL cointegration with the limits test. The dependent status of each variable was treated similarly. If the order of integration of the variables is unclear, the ARDL is employed.

Finally, the influence of the link between macroeconomic factors and stock prices was determined by constructing the vector error correction model(VECM) according to equation (4), which was based on the results of the ARDL test. Eviews version 11 was used for all calculations and tests.

$$= 1 + \sum_{i=1}^6 \alpha_i \Delta Y_{t-i} - 1 + \sum_{i=1}^6 \beta_i \Delta X_{t-i} - 1 + \sum_{i=1}^6 \gamma_i \Delta Z_{t-i} - 1 + \sum_{i=1}^6 \delta_i \Delta W_{t-i} - 1 + \sum_{i=1}^6 \epsilon_i \Delta V_{t-i} - 1 + \sum_{i=1}^6 \zeta_i \Delta U_{t-i} + \dots \dots \dots (4)$$

Results and Discussion Results

The findings of the econometric approaches utilized in this study are presented in this chapter, together with a descriptive analysis and interpretation of those results. The chapter concludes with a summary and discussion of the study's findings.

variables are not normally distributed, as seen by the frequency distributions. Because the values of inflation and broad money growth are so far from zero, which is a requirement of the Jarque-Bera statistics, we may conclude that the data were not normally distributed. Inflation and broad money supply growth were likewise found to be very volatile, with values of 17.91 and 18.53, respectively, when compared to other variables. To move on to the study's econometric methodology.

Descriptive Statistics

Table 4 provides a descriptive analysis of the six variables that were considered in this study. All of the

	LNASI	GDPR	INF	IRS	LNOILP	M2
Mean	11.2068	4.4234	19.3477	6.7726	3.5787	24.7700
Median	11.8464	4.6312	12.2178	7.2032	3.3527	21.6856
Maximum	13.3131	15.3291	72.8355	11.0642	4.7342	87.7614
Minimum	7.2495	-2.0351	5.3880	0.3167	2.5840	-0.7942
Std. Dev.	1.9268	3.8304	17.9130	2.5563	0.7038	18.5256
Skewness	-0.8226	0.4644	1.6987	-0.9468	0.2964	1.3220
Kurtosis	2.2714	3.4271	4.5289	3.8395	1.6231	5.3059
Jarque-Bera	4.7213	1.5239	20.2411	6.2565	3.2774	17.9485
Probability	0.0944	0.4667	0.0000	0.0438	0.1942	0.0001
Sum Sq. Dev.	126.2258	498.8416	10909.77	222.1735	16.84117	11668.78
Observations	35	35	35	35	35	35

Unit Root Test

Table 4.2 ADF Unit Root Test

Variables	Level	1 st Difference	Order of Integration
LNASI	-0.5835 [0.5638]	-5.2866 [0.0008]***	I(1)
IRS	-2.9721 [0.1544]	-6.5901[0.0000]***	I(1)
INF	-4.4079 [0.0070]**	-	I(0)
GDPR	-2.0630 [0.5465]	-10.5068 [0.000]***	I(1)
LNOILP	-2.5024 [0.3251]	-5.9791 [0.0001]***	I(1)
M2	-4.0898 [0.0151]**	-	I(0)

The square brackets enclose the probability values, whereas the values outside the brackets correspond to the t-statistic values. It's worth noting that significance levels are indicated by *** and **, which denote significance at 1% and 5%, respectively.

Lag Selection

The ARDL was estimated using a method based on the Akaike information criterion (AIC). As can be seen in Table 4.3, the AIC is at its lowest with a lag time of one for the ARDL. Intuitively, the finding suggested that stock prices reacted annually to shock from any of the macroeconomic factors because we utilized annual data. Now we'll talk about the ARDL cointegration test.

Table 4.3 ARDL LAG SELECTION

Lag	“Log Likelihood”	“Likelihood Ratio	“Final Prediction Error”
0	-514.1119	NA	1972444.
1	-398.7522	181.7789*	16717.93*
2	-368.7780	36.33240	30344.61

*indicates lag order selected by criterion

AD Lag Co-integration Test

To ascertain if there is a persistent connection between macroeconomic factors and stock prices, the ARDL co-integration approach was utilized. The results of this investigation provide strong evidence against the null hypothesis and in support of the alternative. The F-statistic value (4.417271) was larger than the crucial value for the upper limits (I(1)), prompting this conclusion. The results, summarized in Table 4.4, showed that there is a lasting connection between macroeconomic factors and NGX (Nigerian Exchange Group) stock prices. Using this stable connection, the Vector Error Correction Model (VECM) might be implemented. The VECM estimate results and their consequences are presented in the next section.

Table 4.4 Bounds Test Result

	Value	signif.	I(0)	I(1)
F-statistic	4.417271	10%	2.08	3
k	5	5%	2.39	3.38
		1%	3.06	4.15

Vector Error Correction Model

Table 4.5 displays the VECM's short-run dynamics and the ECT, which represents the rate of long-run adjustment. Short-term effects of GDP changes on LNASI are negligible, at most 0.014 percentage points. Similarly, if you modify the INF rate, the LNASI will go down by 0.004%. The LNASI will increase by 0.003 percentage points for every one percentage point change in the IRS, and it will drop by 0.081 percentage points for every one percentage point change in the LNOILP. However, the LNASI decreases by 0.005% for every 1% shift in the M2. The present period

corrects the prior year's deviance from long-run equilibrium at a rate of 0.003 percent every year.

In Table 4.6, we can see the VECM analysis outcome for the long-term partnership. The findings indicate that a 1% shift in GDP will lead to a 5.95% decline in LNASI. Also, the LNASI changes by 3.07% for every 1% change in the INF, 3.32% for every 1% change in the IRS, and 12.08% for every 1% change in the LNOILP. On the other hand, if the M2 changes by 1%, the LNASI will go up by 0.13 %.

Table 4.5 Vector Error Correction Model Result for Short-Run Relationship

Dependent Variable: Stock Market Price(LNASI)				
Variables	Coefficient	Std. Error	t-Statistic	Prob.
Constant	.1285040**	.0614970	2.0896070	.03830
DLNASII	.1764880	.2041780	.8643800	.38880
DGDPRR	-.0137780	.0125790	1.0953570	.27510
DINFF	-.0040000	.0037510	-1.0663860	.28800
DIRSS	.0033070	.0297160	.1112750	.91150
DLNOILPP	-.0808440	.1988540	-.4065470	.68490
DM22	.0047680	.0029300	1.6272180	.10580
ECT(-1)	-.0029830**	.0013800	-2.1609550	.03230

Note: ** and * show the significance at the 5% and 10% levels.

Table 4.6 Vector Error Correction Model Result for Long-Run Relationship

Dependent Variable: Stock Market Price(LNASI)			
Variables	Coefficient	Std. Error	t-Statistic
LNASI	1.0000000		
Constant	139.26220		
GDP	-5.9494830	1.752030	-3.395770
INF	-3.0664850	.425000	-7.215180
IRS	-3.324288	2.31234	-1.43763
LNOILP	-12.08265	8.97130	-1.34681
M2	.131203	.33565	.39089

Diagnostic Test

Table 4.7 displays the findings of a research that used the serial correlation LM test. The findings suggested

that no serial correlation existed in the specified model.

Table 4.7 Diagnostic Test Result

VEC Residual Serial Correlation LM Test	Results
	Rao F-statistic (.8124990) Prob. (.74750)

Pairwise Granger Causality Test

The study used the Pairwise Granger Causality test to examine the potential for causation between the variables. Table 4.8 details the assessment's findings. At both the 5- and 10-percent confidence levels, the existence of a causative relationship between IRS and LNASI led to the rejection of the null hypothesis,

which asserts that IRS does not Granger cause LNASI. The flow of information was only in one way. At the 10% level of significance, there was a two-way causal relationship between INF and LNASI. At both the 5 and 10% levels of significance, there is a unidirectional causation extending from LNASI to LNOILP and from M2 to INF.

Table 4.8 Pairwise Granger Causality Test Result

Hypotheses		Test Statistic	Decision
IRS does not granger cause LNASI		F-statistic(5.6041) Prob(.0243)	Unidirectional relationship
INF does not Granger Cause LNASI		F-statistic(3.575) Prob(.068)	Bidirectional relationship
LNASI does not Granger Cause INF		F-statistic(3.9286) Prob(0.0564)	
LNASI does not Granger Cause LNOILP	Cause	F-statistic(5.1850) Prob(.02980)	Unidirectional relationship
M2 does not Granger Cause INF		F-statistic(4.8184) Prob(.03580)	Unidirectional relationship

Discussion

The purpose of this research was to examine how different macroeconomic variables affected NGX stock prices. The research established both short- and long-term ties between the considered variables. This result agreed with those of other research by Arodoye (2012), Ahmad et al. (2015), and Mbah, Okoli, and Amassoma (2017). The study did find that GDP had a negative

effect on stock prices, but the effect was not statistically significant. The results of the studies by Nkechukwu, Onyeagba, and Okoh (2015) and Aremo, Olabisi, and Adebayo (2020) were unexpectedly refuted by these results. The most up-to-date data was used in this investigation, which may account for the results. The research showed that inflation rates were inversely related to stock market values. OKereke (2020) and Amusa (2020) and Pole and Cavusoglu

(2021) found results consistent with this one. The statistical significance of this conclusion, however, did not agree with Adaramola's (2011) research.

This research found that higher oil prices related to lower stock prices. This went against the results of Adaramola's (2011) research but was in line with Kuwornu's (2012) empirical examination in Ghana. Our research also showed that an increase in the country's M2 money supply was correlated with a rise in NGX stock values. This result agreed with the research of Josiah and Akpoveta (2019) but disagreed with the findings of Pole and Cavusoglu (2021). The overall money supply had a detrimental effect on stock market values, according to their research. The interest rate spread was included as one of the macroeconomic variables utilized in this study due to the a priori belief that it reflects the degree of economic activities in a country. The analysis concluded that the IRS did, in fact, boost NGX stock prices. It was also discovered that the IRS was the cause of the LNASI's success. Since the NGX stock market rose over the time period of our investigation, this suggested that there was substantial IRS during this time. This study calls for more research into how IRS affects stock prices in Nigeria.

Conclusion and Recommendation Conclusion

The purpose of this research was to examine the connection between macroeconomic factors and NGX stock prices. The methodology used in this research was based on the APT's theoretical framework. In this analysis, we used the ARDL and VECM econometric techniques. Macroeconomic variables had both short- and long-term effects on NGX stock prices. This study also found a negative correlation between GDP growth, inflation, oil prices, and broad money growth, as well as NGX stock prices. However, researchers in Nigeria did not previously evaluate the interest rate spread, which had a favorable correlation with NGX stock prices. The interest rate spread was found to have a unidirectional causal relationship with stock prices. However, this research only applies to the NGX. However, this research has added to the mixed findings of other studies that have looked at how various macroeconomic factors affect stock market values. Recent data and the inclusion of the interest rate spread among the variables utilized in the study from the Nigerian setting suggest that this is a novel addition.

Recommendation

In light of the insights gleaned from this study, the following recommendations are put forth:

a. The Nigerian Federal government is advised to institute strategies aimed at fostering price stability and

effectively managing the regulation of money supply. This will contribute to a conducive economic environment, positively impacting the interplay between macroeconomic variables and stock prices.

b. It is essential for stock investors operating within the Nigerian context to gain a comprehensive understanding of the ramifications associated with varying interest rate spreads on stock prices. This awareness will enable them to make well-informed investment decisions and navigate market fluctuations more effectively.

c. The potential for further advancements in comprehending the interrelationship between interest rate spreads and stock prices within the Nigerian landscape merits exploration. Subsequent studies dedicated to investigating the intricate effects of interest rate spreads on stock prices in Nigeria can offer nuanced insights, contributing to a deeper understanding of this dynamic relationship.

References

- Adaramola, A. O. (2011). 'The Impact of Macroeconomic Indicators on Stock Prices in Nigeria'. *Developing Country Studies*, 1(2), 1-14.
- Adekunle, O. A., Alalade, Y. S., & Okulenu, S. A. (2016). 'Macro-Economic Variables and its Impact on Nigerian Capital Market Growth'. *HARD International Journal of Economics and Business Management*, 2(2), 22-39.
- Adeoti, J., Louis, C., Christopher, B., & Kieran, C. (2016). Compensation mechanisms for fuel subsidy removal in Nigeria. *International Institute for Sustainable Development (IISD)*, 2-13.
- Ahmad, A. U., Abdullahi, A., Sulong, Z., & Abdullahi, A. T. (2015). 'Causal Relationship between Stock Market and Macroeconomic Variables in Nigeria'. *IOSR Journal of Humanities and Social Sciences*, 20(5), 74-96.
- Ahmad, A. U., Umar, M. B., Dayyabu, S., Ahmad, U. G., & Danlami, M. R. (2015). 'Impact of Macroeconomic Variables on Stock Market development in Nigeria: Empirical Evidence with Known Structural Break'. *Scholars Journal of Economic, Business Management*, 2(10A), 971-996.
- Arema, A. G., Olabisi, O. E., & adeboye, O. O. (2020). 'Effects of Selected Macroeconomic Variables on Stock Market Returns in

- Nigeria'. *Asian Journal of Economics, Business and Accounting*, 16(3), 56- 70.
- Areomo, A. G., Olabisi, O. E., & Adeboye, O. O. (2020). 'Effects of Selected Macroeconomic Variables on Stock Market Returns in Nigeria'. *Asian Journal of Economics, Business and Accounting*, 16(3), 56- 70.
- Arodoye, N. L. (2012). 'An Econometric Analysis of the Impact of Macroeconomic Variables on Stock Prices in Nigeria: A Vector Autoregressive(VAR) Model Approach'. *International Review of Business and Social Sciences*, 1(8), 63-77.
- Atoyebi, K., Kadiri, K., Adekunjo, F., Ogundeji, M., & Ademola, I. (2012). Fuel subsidy, agricultural sector, petroleum, budgetary allocation. *International Journal of Humanities and Social Science Invention*, 1(1), 20-29.
- Bakare, T. (2012). *Much ado about fuel subsidy*. Nigeria: Vanguard January 7.
- Bodie, Z., Kane, A., & Marcus, A. (2018). *Investments* (11 ed.). New York: McGraw-Hill.
- CBN. (2020). Statistical Bulletin .
- Chude, D. I., Ifurueze, M. S., & Chude, N. P. (2015). 'Impact of Some Selected Macroeconomic Variables on Stock Market Returns in Nigeria'. *EPRA International Journal of Economic and Business Review*, 3(12), 29-35.
- Cyprian, O. O. (2017). 'Macroeconomic Factors and Stock Market Performance: Evidence from Nigeria'. *International Journal of Social Sciences and Humanities Review*, 7(1), 1-9.
- Daferighe, E. E., & Charlie, S. S. (2012). 'The Impact of Inflation on Stock Market Performance in Nigeria'. *American Journal of Social and Management Sciences*, 3(2), 76-82.
- Dimitriou, A., & Hall, S. G. (2016). *Applied Econometrics*. London: Macmillan Education Palgrave.
- Elbannam, M. A. (2014). The Capital Asset Pricing Model: An Overview of the Theory. *International Journal of Economics and Finance*, 7(1), 216-228.
- Emeh, O. I., & Onyishi, A. O. (2012). The domestic and international implications of fuel subsidy removal crisis in Nigeria. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 1(6).
- Fama, E. F. (1965). The Behavior of Stock-market Prices. *The Journal of Business*, 38(1), 34-105.
- Fama, E. F., & French, K. R. (2004). The Capital Asset Pricing Model: Theory and Evidence. *Journal of Economic Perspectives*, 18(3), 25-46.
- French, J. (2017). Macroeconomic Forces and Arbitrage Pricing Theory. *Journal of Comparative Asian Development*, 16(1), 1-20.
- Good, W., & Jebbin, M. F. (2015). Transportation and national development. *Journal of Economics and Sustainable Development*, 6(9), 1-9.
- Gujarati, D. (2015). *Econometrics by Example*. UK: Palgrave.
- Harcourt, E. E. (2017). 'Macroeconomic Variances and the Performance of the Nigerian Capital Market'. *International Journal of Management Studies and Research*, 5(5), 12-23.
- Harris, D. R., & Fuller, D. Q. (2014). Agriculture: Definition and Overview. *In Encyclopedia of Global Archaeology (Claire Smith, Ed.)*, 104-113.
- Haruna, M. A. (2012). Empirical Analysis of Interest Rate Spread in Nigeria. *International Journal of Economics and Finance*, 6(11), 1-17.
- Hillier, D., & et, a. (2013). *Corporate Finance*. Bradford: McGrawhill.
- Innocent, O., Ogbu, M., & Job, M. P. (2015). An assessment of the impact of petroleum subsidy on consumer price index in Nigeria. *Global Journal of Interdisciplinary Social Sciences*, 4(1), 36-39.
- Ismail, O. S., Tsaku, H., & Bilikisu, M. Y. (2014). The impact of gasoline subsidy removal on the transportation sector in Nigeria. *American Journal of Energy Research*, 2(3), 60-66.
- Izunobi, A. O., Nzotta, S. M., Ugwuantim, G., & Benedict, A. O. (2019). 'Effects of Exchange Rate, Interest Rate, and Inflation on Stock Market Returns Volatility in Nigeria'. *International Journal of Management*

- Science and Business Administration*, 5(6), 38-57.
- Jensen, G. R., & Jones, C. P. (2020). *Investments Analysis and Management*. (14, Ed.) Croydon: John Wiley & Sons.
- Jhingan, M. L. (2012). *The economics of development and planning*. (4. Edition, Ed.) Delhi: Vrinda Publications (P) Ltd.
- John, E. I. (2019). 'Effect of Macroeconomic Variables on Stock Market Performance in Nigeria'. *Journal of Economics, Management and Trade*, 22(6), 1-14.
- Josiah, M., & Akoveta, E. B. (2019). 'Macroeconomic Variables and Nigeria Stock Market Returns'. *Accounting and Taxation Review*, 3(1), 55-68.
- Kiprui, M. (2014). Determinant of Interest Rate Spread: Some Empirical Evidence from Kenya's Bankinf Sector. *International Business Research*, 7(11), 94-107.
- Koop, G. (2013). *Analysis of Economic Data*. UK: Wiley & Sons, Ltd.
- Kuwornu, J. K. (2012). Effect of Macroeconomic Variables on the Ghanaian Stock Market Returns: A Co- integration Analysis. *Agris Online Papers in Economics and Informatics*, 4(2), 1-12.
- Mankiw, N. G. (2013). *Macroeconomics*. (8, Ed.) England: Palgrave Macmillan.
- Mbah, S. A., Tochukwu, T., & Amassoma, D. (2017). 'The Impact of Macroeconomic Indicators on the Nigerian Stock Market Performance'. *International Journal of Economics, Commerce and Management*, 5(8), 710-727.
- Nkechukwu, G., Onyeagba, J., & Okoh, J. (2015). 'Macroeconomic Variables and Stock Market Proces in Nigeria: A Cointegration and Vector Error Correction Model Tests'. *International Journal of Science and Research*, 4(6), 717-725.
- Nkwagu, O. W. (2012). *Fuel subsidy removal and the Nigerian economy (A case study of Abakiliki Local Government Area Ebonyi State)*. Enugu State: Department of Public Administration, Faculty of Management and Social Sciences, Caritas University Amorji-Nike, Enugu.
- Nnenna, O. M. (2012). 'Estimating the Effects of Exchange and Interest Rates on Stock Market in Nigeria'. *International Journal of Development and Management Review*, 7, 226-231.
- Okereke, I. G., & Amusa, B. O. (2020). 'Macroeconomic Variables and Stock Performance in Nigeria: Evidence from Vector Error Correction Model'. *International Journal of Innovation SCience and Research Technology*, 5(12), 1239-1249.
- Okonkwo, J. J. (2019). 'Volatility of Stock Return and Selected Macroeconomic Variables: Evidence from Nigeria Stock Exchange'. *International Journal of Academic Research in Business and Social Sciences*, 9(6), 185-201.
- Onyeizugbe, C. U., & Onwuka, E. M. (2012). Fuel subsidy removal as an imperative for inhancing business development in Nigeria. *VSRD International Journal of Business & Mngt. Research*, 2(9), 453-461.
- Opeyemi, A., Alege, P. O., Ajayi, O. O., Oluwasogo, S. A., & Ese, U. (2017). A simulation of the removal of fuel subsidy and the performance of the agricultural sector in Nigeria using a Dynamic Computable General Equilibrium Approach. *Covenant Journal of Business & Social Sciences (CJBSS)*, 8(1), 60-70.
- Osazee, G. O., & Nosakhare, I. (2014). 'Macroeconomic Variables and Stock Perice Volatility in Nigeria. *Annals of the University of Petrosani, Economics*, 14(1), 259-268.
- OxfordAdvancedLearners. (2001). *Dictionary*. New York: Oxford University Press.
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(1), 289-326.
- Pole, H. C. (2021). 'The Effect of Macroeconomic Variables on Stock Return Volatility in Nigerian Stock Exchnage Market'. *Asian Journal of Economics, Finance and Management*, 3(3), 32-43.
- Prince, I. F., & Ibrahim, B. A. (2011). 'The Effects of Macroeconomic Factors on the Nigerian Stock Return: A Sectoral Approach'. *Global Journal of Management and Business Research*, 11(7), 25-29.
- Ross, S. A., & Roll, R. (1984). A Critical Reexamination of the Empirical Evidence of

the Arbitrage Pricing Theory: A Reply. *The Journal of Finance*, 34(2), 347-350.

Sheriff, I. M., & Amoako, G. K. (2014). Macroeconomic Determination of Interest Rate Spread in Ghana:

Evidence from ARDL Modelling Approach. *Journal of Finance and Bank Management*, 2(2), 115- 132.

Sokpo, J. T., Iorember, P. T., & Usar, T. (2017). 'Inflation and Stock Market Returns Volatility: Evidence from the Nigerian Stock Exchange 1995Q1 - 2016Q4: An E-GARCH Approach'. *Journal of Econometrics and Financial Mangement*, 5(2), 69-76.

Udoka, C. O., Mfon, J. N., & Bassey, J. G. (2018). 'The Effect of Macroeconomic Determinants of Stock Price Movements in Nigeria'. *International Journal of Research - GRANTHAALAYAH*, 6(1), 203-219.

Umeji, G., & Eleanya, E. E. (2021). Assessing the impact of fuel subsidy removal in Nigeria on the poor in the covid-19 era. *SERBD-International Journal of Multidisciplinary Sciences*, 02(04), 1-5.

Uzonwanne, M. C., Ezenekwe, R. U., & Iregbenu, P. C. (2015). Fuel subsidy removal and the Nigerian economy. *Australian Journal of Business and Management Research*, 5(4), 14-25.

