MACROECONOMIC DETERMINANTS OF STOCK MARKET PRICE IN NIGERIA

By

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Abstract

This study examined the effects of selected macroeconomic variables on stock market price in Nigeria, using quarterly time series data for the period 1985 to 2020, and the Vector Auto Regression (VAR) modeling technique. The results show that there exists a long-run relationship among stock prices, inflation rate, interest rate and real gross domestic product for the period under study. The variance decomposition results indicate that inflation rates, real GDP growth, interest rates are the key drivers of stock market price. The study therefore recommends a complete overhaul of current policies which have produced a regime of both high interest and inflation rates and a sluggish output growth.
Keywords: Stock Market Price, macroeconomic determinants, variance decomposition
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Introduction

The stock market plays an important role in financial intermediation in both developed and developing nations by shifting idle capital from surplus to deficit units in the economy. As the economy expands, more resources are needed to meet the demands of rapid expansion; the stock market serves as a useful tool for mobilizing and distributing assets among conflicting goals that are critical to the economy's growth and efficiency (Alile, 1984). Stock prices are sensitive to macroeconomic factors, according to the financial literature. Finance theories, on the other hand, fail to account for these factors precisely.

Since the 1960s, financial asset pricing and returns, as well as the variables that impact them, have been the focus of finance theories. First, they decided to use Sharpe's (1964) Capital Asset Pricing Model to determine the risk-free return as the primary predictor of asset price (CAPM). As a result of additional components, other models such as Ross (1976) Arbitrage Pricing Theory (APT) evolved. While there are a few consistent qualities that influence average stock returns over time, there are several variables that influence the returns of each individual stock, according to APT. In this regard, the APT is more general than the CAPM since it allows a greater number of variables to influence the rate of return (Tunah, 2010). The growing theoretical literature in these fields has seen a rise in empirical testing and validation, although the vast majority of these

empirical studies have concentrated on developed economies, with just a few studies concentrating on emerging and developing economies like Nigeria.

There is, without a doubt, a relationship between stock market expansion and economic growth. Stock prices are assumed to be influenced by various basic macroeconomic variables such as interest rate, inflation, money supply, and exchange rate. According to empirical research, changes in stock prices are linked to macroeconomic behavior in industrialized countries (Muradoglu, et al, 2000; Diacogiannis et al, 2001; Wongbampo and Sharma, 2002; Mukhopahyay and Sarkar, 2003; Gan et al, 2006; Robert, 2008).

The Nigerian stock market price adjustment in 2002, according to Edo (2005), was characterized by perceived irrationality. He attributed the irrational behavior of market players to the excessive share price movement, especially when market fundamentals were weak. Scholars, academicians, and financial professionals have differed on what causes stock prices to deviate from their fundamental value. These have sparked investigations and efforts to discover if market and economic fundamentals are to blame for such erratic behavior. There has been a lot of work done on analyzing stock market price fluctuations in Nigeria, and much of it uses specific aspects in the framework of CAPM and APT models without taking macroeconomic variables into account.

As a result, the question becomes: to what extent and in what ways can macroeconomic indicators in developing countries like Nigeria impact stock prices? To address this important problem, this study examines the relationship between stock prices and a number of macroeconomic indices using quarterly time series data from 1985 to 2020. This research covers both the structural adjustment periods, post-adjustment periods and reform periods. The study is carried out by defining and estimating a Vector Autoregressive (VAR) model, which illustrates the relationship between stock prices and macroeconomic variables. The data for the estimation came from the Nigerian Stock Exchange (NSE), National Bureau of Statistics (NBS) and the Central Bank of Nigeria

Review of Related Literature

There is a substantial corpus of research on the relationship between stock market values and a number of macroeconomic phenomena now available. One method of merging macroeconomic variables is to use Arbitrage Pricing Theories (APT), in which several risk factors might explain asset prices (Ross, 1976).Empirical studies based on the APT are known for modeling a short-term relationship between macroeconomic initial differences while assuming trend stationarity (Asaolu and Ogunmuyiwa, 2011).Extensive empirical research has been undertaken in both

established and emerging nations to identify the impact of significant macroeconomic indicators such as GDP growth, inflation rate, and interest rate on stock prices. Economic and noneconomic data have a considerable impact on stock prices in the capital markets. Changes in interest rates, inflation rates, and other macroeconomic variables such as oil and foreign exchange prices are included in the economic data. On-economic data is linked to political instability and conflicts, as well as other factors such as democracy and political competitiveness in the nation.

Udegbunam and Eriki (2001) conducted a study on the Nigerian Stock Market to establish the presence of a negative association, and their findings reveal a negative relationship between stock prices and inflation. They also indicate that the degree of economic activity, as measured by GDP, interest rate, money stock, and financial deregulation, has a considerable impact on stock prices.

A number of studies, like those done by Geske and Roll (1983) on stock prices in the United States and Humpe and Macmillan (2007) on stock prices in the United States and Japan, have found a positive relationship between stock prices and inflation rates. In the United Kingdom, Firth (1979), Maysami et al (2004), and Adam and Tweneboah (2008) revealed a significant positive relationship between stock prices and expected inflation. However, we do not have evidence that causality is being examined in other Nigerian circumstances. Stock prices tend to be pushed down by the rising movement of other prices in the economy.

This will be partially the result of stock market operatives' attempts to successfully anchor stock prices as a hedge against asset value loss due to domestic inflation. In reality, research in the literature suggests a possible negative short-run link but a favorable long-run relationship.

There have been a variety of challenges in examining the link between interest rates and stock prices. The interest rate is a cost of doing business when it comes to investing in equities. It is also a factor in calculating the equity capitalization rate. As a result, it is regarded as one of the cost important factors influencing investor behavior in the market. Zhou (1996) used regression analysis to investigate the link between interest rates and stock prices.

He pointed out that interest rates have a significant influence on stock values, particularly over long time horizons, but that the assumption that predicted stock returns move in lockstep with ex ante interest rates is incorrect. According to Abugri (2008), the reaction of stock prices to interest

rates is negative and considerable in Brazil, Argentina, and Chile, but the response of returns to interest rates appears to be minimal in explaining return movement in Mexico.

According to Deferigbe and Aje, (2019), stock prices and future real gross domestic product are linked. Cochrane (1994) also finds substantial evidence that transitory shocks cause considerable fluctuations in GDP growth and stock prices. The GDP growth rate is the most crucial indication of the economy's health.

Research Method

This research is based on quarterly time series data and spans 35 years (1985 through 2020). Due to the lack of data on the All Share Price Index before 1985, this timeframe was chosen. The Nigerian Stock Exchange originally issued the All Share Price Index in 1985, using a base year of 1984. In addition, over the same period, quarterly time series data for GDP growth, inflation rate, and interest rate were used. Because of the nature of this investigation, it was necessary to employ secondary data. The Security and Exchange commission, the Central Bank of Nigeria (CBN), and the Nigerian Stock Exchange Statistical reports and bulletins were used to compile this report.

This study uses the Vector Auto regressions approach to illustrate the hypothesized correlations between stock prices and macroeconomic factors as outlined in the literature review. The model employs multivariate co-integration analysis and Unit roots testing, in particular. Forecast Error Variance Decomposition (FEVD) and Impulse Response Functions (IRFs) are used to investigate the dynamic correlations between macroeconomic factors of interest and stock prices in the VAR system. By considering all variables as endogenous, the VAR method overcomes the endogeneity/exogeneity dilemma, and it is a dynamic system of equations in which the present level of each variable in the system is dependent on previous movements in that variable and all other variables in the system. To find the best lag length, the Akaike Information Criteria (AIC) is utilized for each macroeconomic indicator. The model was estimated with the help of Microfit 4.0 Econometric Software (Pesaran, and Pesaran 1997).

The model is as follows:

$$V_t = \sum A_i V_{t-1} + \mu_t \quad \text{.....1.1}$$

$$V_t = (GRGDP, INFL, INTR) \quad \text{.....1.2}$$

V_t = the vector of all the key macroeconomic variables (interest rate, inflation rate and GDP growth) relevant to the determination of stock prices.

A_i = is the matrix of coefficients of all macroeconomic variables in the model.

V_{t-1} = is the vector of the lagged variable.

μ_t = is the vector of the stochastic error term.

In addition:

$$ASP_t = \alpha_{1t} + \sum b_{11}ASP_{t-1} + \sum \gamma_{12}GRGDP_{t-1} + \sum ß_{13}INFL_{t-1} + \sum \delta_{14}INTR_{t-1} + U_{1t} \quad .....1.3$$

$$GRGDP_t = \alpha_{2t} + \sum b_{21}ASP_{t-1} + \sum \gamma_{22}GRGDP_{t-1} + \sum ß_{23}INFL_{t-1} + \sum \delta_{24}INTR_{t-1} + U_{2t} .....1.4$$

$$INTR_t = \alpha_{3t} + \sum b_{31}ASP_{t-1} + \sum \gamma_{32}GRGDP_{t-1} + \sum ß_{33}INFL_{t-1} + \sum \delta_{34}INTR_{t-1} + U_{3t} .....1.5$$

$$INFL_t = \alpha_{4t} + \sum b_{41}ASP_{t-1} + \sum \gamma_{42}GRGDP_{t-1} + \sum ß_{43}INFL_{t-1} + \sum \delta_{44}INTR_{t-1} + U_{4t} .....1.6$$

U = Error term or disturbance

Where;

ASP = All Share Price Index (proxy for stock price)

GRGDP = Growth Rate of Gross Domestic Product

INFL = Inflation Rate

INTR = Nominal interest Rate

term. b, α, δ, ß and γ are coefficients

Estimation procedures; Results

Table 1 shows results for the unit root test for the variables using the Augmented Dickey – Fuller (ADF) procedure.

Table 1 ADF Unit Root Test Results

Variables	ADF Test Statistics	ADF lag	95% critical value for ADF	Order of integration	Remarks
DLASP	- 5.124*	1	-3.456	I (1)	Stationary
DLRGDP	-19.50*	1	-3.454	I (1)	Stationary
DLINFL	-7.016*	1	-3.454	I (1)	Stationary
DLLINTR	-7.07*	1	-3.45	I (1)	Stationary

Researchers' output *stationary at 5% level of significance

At the 5% level of significance, the results of the Augmented Dickey-Fuller test in table 1 reveal that all the variables (stock market prices, GDP growth, inflation rate, and interest rate) are integrated of order one, that is, I(1). As a result, the price of the stock market is a difference

process. Other macroeconomic variables in the model are integrated at the same level as well. As a result, the first requirement of Engel and Granger's (1987) method is met. This is followed by tests of co-integration.

Table 2: Co-integration Test Results

Variables	ADF Statistics	ADF lag	95% ADF critical value	Order of Integration	Remarks
Residuals	- 4.88	1	- 4.21	I(1)	Stationary

Stationary at 5% level of significance

The ADF test results are bigger in absolute terms than the 95% critical ADF, as shown in table 2. The fact that the residuals are stationary is indicated by this finding. The dependent variable and independent variables are co-integrated in this case. This finding demonstrates that between 1985 and 2020, there was a long-run stable link in Nigeria between stock market prices, GDP growth, inflation rate, and interest rate, such that any short-term divergence in their behavior would converge in the long run. Similar researches in both rich and developing nations have established a long-run association between share price and macroeconomic factors, and our conclusion is consistent with them, for example, Gan et al (2006).

The forecast error variance decomposition is further examined to learn more about the short run dynamic features of stock market pricing. The variance decomposition, by definition, displays the fraction of prediction error variation owing to each variable's own innovation as well as innovations in other endogenous variables. The variance decomposition method is used to find the causal relationship between the variables in a VAR. It describes the degree to which the shocks in all the variables in the system explained a (Mishra, 2004). This strategy adds to our understanding of the dynamic behavior of the system's variables. The forecast error variance may be decomposed into contributions from each of the distinct shocks. The forecast error variance decomposition, when performed using structural shocks, as in our instance, gives information on the role of various structural shocks in explaining the forecast error variable of stock prices, real gross domestic product, inflation rate, and interest rate. The following tables show the results of the forecast error variance decomposition test for the four variables:

Table 3: -Variance decomposition for variable DLASP

Horizons	-S.E	-DLASP	-DLRGDP	-DLINF	-DLLINTR
0	-	1.000	0.025	0.041	0.003
5	0.191	0.767	0.086	0.115	0.0753
10	0.183	0.729	0.108	0.131	0.0763
15	0.65	0.688	0.121	0.133	0.102
20	0.824	0.669	0.137	0.134	0.104
25	0.022	0.668	0.135	0.131	0.109
30	0.024	0.657	0.144	0.131	0.110
35	0.0267	0.649	0.143	0.134	0.113
40	0.212	0.649	0.144	0.132	0.113
45	0.2150	0.642	0.147	0.134	0.114
50	0.0013	0.641	0.147	0.134	0.114

Researchers/ Computation Output

The variance decomposition of all share price index is shown in Table 3. The table shows the proportion of prediction error variance in share price that may be ascribed to its own innovations as well as innovations in real gross domestic product, inflation rate, and interest rate.

Over the time horizons, the shocks in prior share prices on share price varied from 64.1 to 100 percent. Inflation rate innovations of 4.2% to 13.3% and interest rate innovations of 0.3% to 11.4% account for between 2.50% and 14.80% of the prediction error variance of share price, while real gross domestic product innovations account for between 2.50% and 14.80% The various time horizons. The main take away from the variance decomposition results is that "own shocks" are the primary source of share price changes. The findings also demonstrated that changes in Nigeria's real gross domestic product, inflation rate, and interest rate all predict the degree of variation in share values over time.

Table 4: Variance Decomposition for variable LGRGDP

Horizons	-S.E	-LASP	-LGRGDP	-LINF	-LINTR
0	-	0.046	1.000	0.00130	0.80
5	0.0685	0.06762	0.861	0.121	0.0298
10	0.6220	0.0779	0.770	0.164	0.0791
15	0.1699	0.147	0.719	0.129	0.0691
20	0.2512	0.262	0.656	0.116	0.049
25	0.00640	0.2562	0.662	0.122	0.0454
30	0.0079	0.271	0.651	0.114	0.0528
35	0.00839	0.2643	0.618	0.127	0.0923
40	0.06311	0.260	0.594	0.141	0.117
45	0.06347	0.265	0.590	0.139	0.121
50	0.00422	0.2654	0.599	0.135	0.117

Researchers Computation Output

The variance decomposition of real gross domestic product is shown in Table 4. The table shows the fraction of forecast error variance in real gross domestic product that may be ascribed to its own innovations, such as share price, inflation rate, and interest rate.

Over the time horizon, the shocks in previous real gross domestic product on real gross domestic product varied from 59% to 100%. While interest rates contribute for between 2.9% and 80% of the prediction error variation of real gross domestic product, share price changes account for between 4% and 27%, and inflation rate changes account for between 0.13% and 16%. The results of the variance decomposition show that real gross domestic product variations are mostly caused by "own shocks" and interest rate changes. It also demonstrates that share price and inflation rate differences in real gross domestic product may be explained.

Table 5: -Variance Decomposition for variable LINF

Horizons	-S.E	-LASP	-LGRGDP	-LINFL	-LLINTR
0	-	0.0245	0.003	1.00	0.0548
5	1.760	0.0618	0.0147	0.790	0.276
10	1.599	0.0527	0.0284	0.713	0.352
15	4.364	0.202	0.0542	0.618	0.292
20	6.45	0.223	0.0570	0.592	0.287
25	0.164	0.251	0.0553	0.564	0.275
30	0.204	0.276	0.0557	0.536	0.271
35	0.215	0.303	0.0535	0.512	0.259
40	1.62	0.334	0.0548	0.486	0.245
45	1.62	0.341	0.0567	0.479	0.241
50	0.108	0.351	0.0567	0.466	0.238

Researchers Computation Output

The variance decomposition of inflation rate is shown in Table 5. The table shows the fraction of prediction error variance in inflation rate that may be attributable to its own innovations and innovations in share prices, real GDP, and interest rate. Over time periods, the shocks in historical inflation rates varied from 46.70% to 100.0%. In the prediction error variance of inflation rate on the time horizon, real GDP innovations account for between 0.3% and 56.8% of the forecast error variance, while share price innovations account for between 2.5% and 35% and interest rate innovations account for between 5% and 35 %. The main takeaways from the variance decomposition results are that "own shocks" and real gross domestic product innovations are the main sources of inflation rate swings.

The findings also show that changes in share prices and interest rates in Nigeria

Table 6: Variance Decomposition for variable LLINTR

Horizons	-S.E	-LASP	-LGRGDP	-LINFL	-LLINTR
0	-	0.432	0.1479	0.0610	1.0000
5	0.2106	0.217	0.01609	0.0775	0.7776
10	0.189	0.243	0.02246	0.1926	0.6701
15	0.504	0.204	0.02576	0.2619	0.6939
20	0.7411	0.2102	0.02923	0.265	0.6823
25	0.01901	0.2239	0.03430	0.258	0.667
30	0.02306	0.248	0.03679	0.2518	0.644
35	0.02582	0.2499	0.03875	0.2498	0.640
40	0.1881	0.2598	0.0403	0.244	0.631
45	0.191	0.2759	0.04226	0.236	0.612
50	0.0175	0.2805	0.0455	0.233	0.605

Researchers Computation Output

The variance decomposition of interest rate is shown in Table 6. The table shows the proportion of forecast error variance in interest rate related to its own innovations and innovations in share price real gross domestic product, inflation rate, and interest rate. Over time periods, the shocks in historical interest rates on interest rates varied from 60.5% to 100%. On the time horizons, share price innovations contribute for between 20.5% and 43% of the prediction error variance of interest rate, while real gross domestic product innovations account for between 1.6% and 14.8% and inflation rate innovations account for between 6.1% and 26.5%. The findings of the variance decomposition show that the primary source of interest rate swings is "own shocks," as well as share price changes.

Also, in Nigeria, the real gross domestic product and inflation rate are poor predictors of interest rate variations. We may conclude from these findings that the dynamics of interaction between macroeconomic factors (such as real gross domestic product, inflation rate, and interest rate) and stock prices in Nigeria appear to vary over time. This might be attributed to government policy adjustments aimed at improving policy target effectiveness and reducing stock market volatility.

The main finding of the variance decomposition is that the major causes of stock market prices are the rate of inflation, real gross domestic product, interest rate, and "own shocks." Nonetheless, our findings suggest that the inflation rate, interest rate, and real gross domestic product are all suitable candidates for government monitoring and management in order to keep stock prices stable. Fama (1990), Maysami et al (2004) and Abugri (2008) agree on this. The Impulse

Response function is used to identify variable interaction. It plots the reaction of the VAR system's dependent variable to the shocks in the error term. In other words, it shows how each variable reacts to a certain shock or innovation at time.

The variables in the system must be arranged in order to compute the IRFs, and the system must be represented by a moving average process. The following are the outcomes:

Table 7: -Generalized IRFs to one SE shock in the equation for DLASP

Horizons	-S.E	-DLASP	-DLRGDP	-DLINF	-DLLINTR
0	-	0.1304	-0.00587	0.1822	-0.00465
5	0.1912	0.00599	0.00145	-0.00940	0.6716
10	0.183	-0.04355	0.00992	-0.0555	-0.00412
15	0.659	0.00431	-0.0161	0.0670	-0.0097
20	0.824	0.00326	-0.0195	0.0609	0.1005
25	0.0229	-0.0137	0.00971	-0.0405	0.00626
30	0.02414	0.0126	0.0208	-0.00563	-0.0152
35	0.0268	0.00153	-0.00774	0.0191	0.00452
40	0.2124	-0.0112	-0.0174	-0.0228	0.0129
45	0.215	0.00956	0.00873	-0.00486	-0.00198
50	0.00135	-0.535	0.0144	0.0159	-0.0109

Researchers Computation Output

The impulse response functions of share prices against "own shocks" and shocks in real domestic product, inflation rate, and interest rate are shown in table 4.7 over time horizons. The results demonstrate that in the short term, historical share price shocks had a positive connection with present share price, before becoming negative at the 10th horizon, being positive again at the 15th to 20th horizons, and remaining negative at the end of the horizons. The link between share price and real domestic product shocks was discovered to be negative at first, then positive at the 5th to 10th horizons, then having an opposite relationship within the temporal horizons, and finally becoming positive in the long term. The link between share price and inflation rate shocks shows that it was positive in the beginning, then went negative between the 5th and 10th horizons, then positive between the 15th and 20th horizons, and finally positive at the conclusion of the periods. In the instance of the stock market's reaction to interest rate shocks, it was discovered that the connection was negative at first, then became positive at the 5th, 20th, 25th, 35th, and 40th horizons, before returning to negative at the end of the 50th horizon.

Table 8: -Generalized IRFs to one SE shock in the equation for -DLGRGDP

Horizons	-S.E	-DLASP	-DLGRGDP	-DLINF	-DLLINTR
0	-	-0.0280	0.0318	0.0455	0.00245
5	0.0685	-0.0207	0.0128	-0.0382	0.0115
10	0.622	-0.00429	-0.0145	0.655	-0.0080
15	0.1699	-0.00940	-0.0184	-0.0103	0.0184
20	0.25122	-0.00355	0.02533	0.0431	-0.0042
25	0.00640	0.0222	0.0149	-0.0260	-0.0124
30	0.00795	0.00356	-0.161	0.0502	-0.00368
35	0.00839	-0.0138	-0.0092	-0.0195	0.00715
40	0.0631	0.0106	0.0163	-0.0339	-0.0048
45	0.0634	-0.00271	-0.515	0.0530	-0.00875
50	0.00421	-0.0202	-0.0189	-0.0299	0.00735

Researchers Computation Output

The impulse response functions of real domestic product against "own shocks" and shocks in share prices, inflation rate, and interest rate are shown in table 8 and the findings reveal that historical real gross domestic product shocks had a positive connection with present real gross domestic product at first, but then became negative and remained negative until the conclusion of the period. It was discovered that the connection between real gross domestic product and share price shocks was negative in the short run, became positive at the 25th, 30th, and 40th horizons, but was negative in the long run. Also, it was discovered that the connection between real gross domestic product and inflation rate shocks was positive at first, then went negative at the 5th horizon, then positive at the 10th, 20th, 30th, and 45th horizons, before eventually becoming negative until the conclusion of the period.

The short-run response of real gross domestic product to interest rate shocks is positive, but becomes negative at the 20th, 25th, 30th, 40th, and 45th horizons, before returning to positive at the conclusion of the horizons.

Table 9: Generalized IRF to one SE shock in the equation for -DLINFL

Horizons	-S.E	-DLASP	-DLGRGDP	-DLINF	-DLLINTR
0	-	0.0203	0.00178	0.818	-0.020
5	1.760	0.0257	-0.1351	-0.0162	-0.00929
10	1.599	0.0456	-0.00765	-0.7537	-0.0410
15	4.364	-0.0104	-0.00365	-0.1327	-0.0281
20	6.450	-0.0536	-0.9377	-0.0343	-0.3031
25	0.164	-0.0257	-0.00423	-0.0197	-0.750
30	0.2041	0.00657	0.9703	0.0128	0.0107
35	0.215	-0.0145	0.0132	0.00286	0.00230
40	1.620	-0.0114	0.0126	-0.0586	-0.0015
45	1.629	0.00455	-0.00153	0.0414	-0.00482
50	0.1083	-0.0182	-0.00236	0.0854	0.00382

Researchers Computation Output

The impulse response (IR) functions of inflation rate against "own shocks" and shocks in share prices, inflation rate, real gross domestic product, and interest rate over time horizons are shown in table 9 and the results reveal that historical inflation rate shocks had a positive relationship at the start, a negative association between the 5th and 25th horizons, and a positive link with present inflation rate until the conclusion of the periods. The results demonstrated that the link between inflation rate and share price shocks was positive in the short term, then negative, and eventually negative at the conclusion of the period. Inflation's reaction to real gross domestic product shocks began with a positive relationship, then became negative between the 5th and 25th horizons, then positive between the 30th and 40th horizons, and ultimately negative until the conclusion of the era. In addition, the reaction of inflation to interest rate shocks first showed a negative connection, but then became positive at the conclusion of the periods.

Table 10: Generalized IRFs to one -SE shock in the equation for -DLLINTR

Horizons	-S.E	-DLASP	-DLGRGDP	-DLINF	-DLLINTR
0	-	-0.00234	0.3723	-0.2088	0.0894
5	0.2107	-0.0313	-0.00419	-0.1461	0.0105
10	0.1898	-0.0411	0.00356	0.1566	0.0350
15	0.504	0.04647	-0.00238	0.0464	0.0323
20	0.741	0.0791	-0.00747	0.5936	-0.00435
25	0.0190	0.0263	0.00231	-0.0502	0.0107
30	0.0231	0.0197	-0.0119	-0.0826	-0.0167
35	0.0258	0.0276	-0.0248	0.00148	0.00790
40	0.188	-0.00535	-0.0068	0.0382	0.00570
45	0.1917	0.01236	0.2893	-0.0861	0.0057
50	0.0175	0.04233	-0.0124	-0.0341	0.9226

Researchers Computation Output

The impulse response functions of the interest rate against "own shocks" and shocks in share prices, real gross domestic product, inflation rate, and interest rate are shown in table 4.10 and except for the 20th and 30th horizons, when the association became negative, the data reveal that prior interest rate shocks had a positive relationship in both the short and long term. The outcome of the interest rate reaction to share price shocks demonstrates a negative connection in the short term, a positive relationship between the 25th and 35th horizons, and a positive relationship from the 45th horizon until the conclusion of the period.In addition, the interest rate's reaction to real gross domestic product shows a positive association at first, then a negative relationship at the 5th, 15th, and 20th horizons between 30 and 40th, and ultimately a negative relationship towards the conclusion of the periods. The interest rate's reaction to inflation rate shocks shows a negative connection at first, then a positive relationship between the 10th and 20th horizons, and ultimately a negative relationship from the 45th horizon until the conclusion of the period.

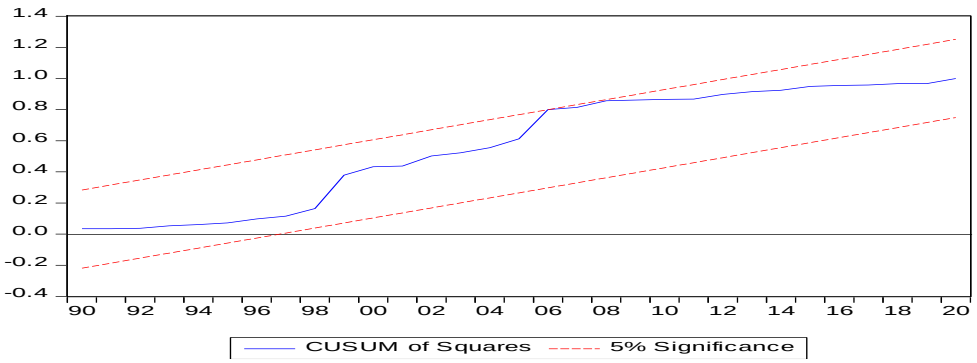

Figure 1: Stability Tests

The result of CUSUM test above obtained from the model showed that there is evidence of stability in the coefficient at 5% level of significance in CUSUM Test since the cumulative Sum is located within the area between the two critical lines.

Conclusion; Recommendations

Using quarterly time series data from Nigeria, an attempt was made to evaluate the influence of macroeconomic variables on Nigerian stock prices. The unit root test, co integration test, forecast error variance decomposition, and impulse response functions test were all used for this purpose. All variables were stationary at first difference. Over the period 1985 to 2020, the long term link between stock prices, inflation rate, interest rate, and real gross domestic product was established using the co-integration test. Stock prices respond to changes in inflation rate, interest rate and real gross domestic product, in both the short and long term. According to the results of variance decomposition and impulse response (IR) function. This discovery is significant in at least two ways. One, the macroeconomic factors of interest rate and stock prices in Nigeria have a short and long term link. Second, it demonstrates that, in terms of their relative contributions and dynamic interconnections, stock prices are responsive to changes in macroeconomic factors. As a result, it becomes clear that the Nigerian stock market may be extremely susceptible to global macroeconomic variables or other significant difficulties in the Nigerian economic environment.

The outcomes of this study demonstrate that the government should give priority to the growth of output, reduce inflation rate as well as interest rate by using appropriate financial policy instruments in order to stabilize stock values in Nigeria. The study recommends again that the cost of acquiring funds (i.e. interest rate) in the Nigeria market, which appears high, be reviewed downward in order to guarantee viable stock market. This would increase its competitiveness and make it more appealing as a key source of funding

To keep the stock price stable the Government must abandon its existing policies which have thus far produced a regime of very high interest and inflation rates, and come up with viable policies that can guarantee low interest and inflation rates.

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