Effect of Inflationary Trends on Capital Market Performance of Fast-Moving Consumer Goods Companies in Nigeria

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Abstract

This study investigates the effect of inflationary trends on capital market performance of fast moving consumer goods in Nigeria within the data set of 2010-2020. The guiding objectives of the study are (i) to ascertain the effect of consumer price index on market value/capitalization in fast moving consumer goods companies in Nigeria. (ii) to ascertain the effect of interest rate on capital market value in fast moving consumer goods companies in Nigeria. The study adopts the Ex-post Facto research design and the Ordinary Least Square (OLS) Estimation Technique in analyzing times series data on market share, consumer price index and interest rate for a period of 12 years generated from the Central Bank of Nigeria statistical bulletin and the researcher's computations. The findings of the study this study reveals that consumer price index has a positive and significant relationship with the market share, this implies that an increase in the units of consumer price index will lead to a significant increase in the market share in the period analysed. More so, the study reveals that interest rate have negative and significant relationships with market share, which implies that an increase in the units of interest rate will lead to decrease in the market share in the period analysed. The researcher recommends that government should make necessary and informed trade policies capable of attracting more investors into the country that will bring down the level of consumer price index. This would go a long way in enhancing the Nigerian economy.

Keywords: Inflationary trend, Interest rate, Capital market, Consumer Goods

INTRODUCTION

Inflation has been a persistent problem in Nigeria. There has been a consistent rise in the prices of goods and services over the years, bringing untold hardship to the people and with no end in sight. Recent data published by the National Bureau of Statistics (NBS) reveals that the Nigerian inflation rate surged to a 33-month high, as it rose further to 16.47% in January 2021 from 15.75% in December 2020. This marks 17 consecutive months of continuous increase in prices of goods. "As of April 2021, the inflation rate was the highest in four years. Food prices accounted for over 60% of the total increase in inflation. Rising prices have pushed an estimated 7 million Nigerians below the poverty line in 2020 alone" (Nasir 2021).

Inflation causes untold hardships to both individuals and organisations alike. The purchasing power of money drops and people have to spend more to have the same minimum standard of living they had before. Meanwhile their incomes have not increased especially those that earn fixed salaries like civil servants and pensioners. Wage earners and businesses are not better off either. Ln as much as they can increase the prices of their products or services as prices increase, patronage would below as fewer people have the desire and ability to pay due to the fall in purchasing power of money. A couple of years back, a 50kg bag of rice was going for about N8,500 in the Nigerian market. Today, that same bag of rice goes for about N25,000. Likewise, a 50kg bag of cement that was going for about N1,500 about a year ago, now goes for about N5,000. Crime rate has increased on all fronts from big crimes like kidnapping, ritual killing, and advance fee fraud to smaller crimes like stealing pots of food while it was still on fire, all these are due to inability to make ends meet due to high inflation. Inflationary trends cause lots of problems in the society, it affects the livelihood of low income earners as the fall in the purchasing power of their money causes a drop in their ability to make ends meet, it causes unemployment as businesses are compelled to lay off their workers or cut wages in order to remain profitable. It discourages savings. Where the rate of inflation is higher than the interest rate on savings, savers suffer a loss in the value of their savings. Lenders have to increase their lending rate otherwise they too will suffer loss of value on their funds, businesses may be compelled to pay higher wages to be able to retain its work force. Uncontrolled inflation could also lead to an unfavourble balance of payments situation, it could result to capital flight, fall in foreign direct investment and many other adverse economic effects. The harmful effects of inflation can be summarized under four headings: Higher Interest Rates, Lower Savings, Lower Exports and Mal-Investments.

The chief cause of inflation in Nigeria was related to the inability of the government to restructure the economy and stop the over-dependence on oil exports.Some of the efforts already undertaken by government include: reducing gasoline subsidies, adjusting electricity tariffs, cutting nonessential spending and redirecting resources towards the COVID-19 response and improving public-sector transparency especially, around the operations of the oil and gas sector (Chaudhuri. 2021). The efforts of government to curb inflationary trends in the country seems not to have yielded enough results in the desired direction.This study aims to find out how investment in the stocks of fast moving consumer goods companies are affected by inflationary trends in Nigeria. The findings will aid government and other decision makers in decision making regarding inflation. The broad objective of the study was to evaluate the effect of inflationary trends on the Market Performance of Fast Moving Consumer Goods Companies in Nigeria and the basic hypothesis underlying this study are stated thus;

HO1: Consumer Price Index has no significant effects on market value/capitalization in fast-moving consumer goods companies in Nigeria.
HO2: Interest rates have no significant effects on market value/capitalizationin fast-moving consumer goods companies in Nigeria.

LITERATURE REVIEW

Conceptual Framework

The conceptual framework around which this study was carried out was the macro-economics theory. Macroeconomics theory tries to understand the complex relationships among various macroeconomic variables like economic growth, business cycles, unemployment, inflation, international trade and others from a theoretical perspective, developing relevant models to help economists understand and explain aggregate phenomena in the economy.

Inflation

Inflation can be seen as a general decline in the purchasing power of a given currency over a given time. Milton Freedman (2001) defined inflation as an economic collective, increases in the supply of money in money incomes, or prices. Inflation is generally thought of as an inordinate rise in the general level of prices.TeiyanPettinger (2021) sees inflation as a situation of rising prices in the economy. A more exact definition of inflation is a sustained increase in the general price level in an economy. Inflation means an increase in the cost of living as the price of goods and services rises. The rate of inflation measures the annual percentage change in the general price leve**l. a convenient** starting point for discussion is Milton Friedman's (1963) definition of inflation as a steady and sustained increase in the general price level". Friedman emphasizes the distinction between steady inflation and one that proceeds at a more or less constant rate, and intermittent inflation, one that proceeds by fits and starts.

Similarly, Laidler and Parkin (1985) define inflation as a process of continuously rising prices, or, equivalently, of a continuously falling value of money. They also emphasize the persistence or continuity of changes in prices as a defining characteristic of inflation. One conception of core inflation is based on the distinction between the steady or persistent component of measured inflation, and intermittent or transient inflation. The definition of core inflation as the persistent element is reflected in a common tendency to describe core inflation and trend inflation as essentially synonymous or to draw a distinction between price level shocks (having only a temporary impact on measuredinflation) and more persistent inflation shocks.In keeping with the conception of core inflation as the persistent element of inflation, Quah and Vahey (1995) define core inflation "...as that component of measured inflation that has no medium- to long-term impact on real output". For this component of inflation to be output neutral over the medium to long term, it must be the component of inflation that feeds into or reflects inflation expectations.

Interest Rate

In simple words, interest means the reward for the use of capital. It is also called the income of the owner of capital for lending it. In other words, it is the price paid by the borrower of money to its lender. The

concept of interest rate has also been explained by a lot of scholars in different ways; according to Marshall, Interest is the price paid for the use of capital in any market. J.M. Keynes sees Interest as a reward for parting with liquidity for a specified period. Cairncrossdefines Interest as the price paid for the hire of loan capital. To Carver, Interest is the income that goes to the lender of capital under its productivity as a reward for its abstinence. There are two concepts of interest: Gross Interest and Net Interest. Gross Interest: Gross interest refers to the entire payments made by the borrower to the lender on a certain amount of loan received for a while. It includes not only the payment for the use of money capital but also for risks, inconvenience, and management. Gross Interest = Net Interest + Risk bearing + Reward for management + reward for inconvenience. Net Interest: Net interest is the payment purely made for the use of money. Net interest rate is determined by the forces of demand and supply of funds or money. It generally relates to the public and is comparatively low to gross interest. The loan market is not characterized by the prevalence of one definite rate of interest. The rate of interest differs from place to place and from person to person. Some factors bring about such a situation.

Trend of Inflation in Nigeria

The facts and figures obtained from the IMF World Economic Outlook Report (2011) revealed that Nigeria's GDP tends to be low when the inflation rates are high apart from a few years in the 80s. For example, in 1998 GDP growth rate was relatively high amidst the high inflationary levels at the time. This could be the positive effect of increased domestic productivity which was the major thrust of SAP in the sense that domestic output increased. In 1986, the rate of inflation in Nigeria was 6.25 with a GDP growth rate of 8.754; in 1987 the rate of inflation rose to 11.765 percent with the GDP growth rate decreasing to -10.752. The inflation rate rose sharply to 34.211 and 49.2 respectively in 1988 and 1989 with the GDP growth rate of 7.543 and 6.467 within these years. In 1990, the rate of inflation was stabilized at 7.895 with the GDP growth rate higher than the rates experienced since the introduction of SAP in 1986. The rate of inflation continued to Skyrocket above double-digit nearing triple digits in some of the years where it was above 50 percent in the period between 1993 and 1995. This was reflected in the abysmal level of Nigeria's GDP growth rate within the period. The rate of inflation rose from 12.195 percent in 1991 to 44.565 in 1992, 57.416 in 1993, 72.721 in 1994, and 72.81 in 1995 with the corresponding value of the GDP growth rate of -0.618, 0.434, 2.09, 0.91, and 0.307 within those years. In 1996, the rate of inflation reduced drastically to 29 percent though not healthy for meaningful investment and further reduced to 10.673 in 1997, 7.862 in 1998, and 6.618 in 1999 and remains relatively stable at 6.938 in the year 2000.

Within this period the value of GDP growth rate was 4.994 in 1996, 2.802 in 1997, 2.716 in 1998, and 0.474 in 1999 and gained slightly to 5.318 in the year 2000. The trend of inflation between 2001 and 2010 in Nigeria at the average level is in the double-digit rate but the GDP growth seems unimpressive which could be attributed to petroleum export proceeds. The inflation rate was 18.869 in 2001, 12.883 in 2002, 14.037 in 2003, 15.001 in 2004, 17.856 in 2005, 8.218 in 2006, 5.413 in 2007, 11.581 in 2008, 12.543 in 2009 and 13.72 in 2010 with the corresponding GDP growth rates within these years as 8.164, 21.172, 10.335, 10.585, 5.393, 6.211, 6.972, 5.984, 6.96, and 8.724, respectively. Despite the relatively good annual GDP growth rate, the poverty level and unemployment keep growing. The level of investment does not match the growth level because inflation constitutes risk. It, therefore shows that the level of inflation in Nigeria is disinvestment and not likely to translate to sustainable development in the long run.

Nexus between Inflation and Interest rate in Nigeria

Inflation and interest rate are interlinked, two basic factorsthat can lead to inflation which are the supply-side and demand side. On the side of the supply, if the cost of production increased as a result ofan increase in interest rate, the final price of the goods and services will be increased. On the demand side, if the aggregate demand is higher than the aggregate supply, the prices of goods and services will be increased (Davis, 2019). Inflation can be both beneficial to economic recovery and, in some cases, negative. If inflation becomes too high the economy can suffer; conversely, if inflation is controlled and

at reasonable levels, the economy may prosper. With controlled, lower inflation, employment increases. Consumers have more money to buy goods and services, and the economic benefits grow. However, the impact of inflation on economic recovery cannot be assessed with complete accuracy. Some background details will explain why the economic results of inflation will differ as the inflation rate varies (Davis, 2019).

Capital Market Performance

Donwa and Odia (2011) described the capital market as an institution that contributes to the socio-economic growth and development of bothdeveloping and developed economies by channeling funds from surplus units to projects with positive NPVs.Owolabi and Adegbite, (2013) posited that thecapital market provides the industries and governments long-term funds to meet their long-term capital requirement such as financing of fixed investments like buildings, plants, machinery, bridges, e.t.c. A capital market that has been performing enormously in its operation is invariably affected by the level of inflation in Nigeria. Omodero, (2019) defined market capitalization as the total monetary value of all outstanding shares of a company. The Capital Market prices of listed securities are measures of the values of such securities. However, when comparing two or more shares, the market price will not be a good determinant of the comparative values of both companies. To determine the comparative value of two shares the measure to use is market capitalization.Market Capitalisation is derived from stock price by multiplying the most recent share price of a company by the total number of outstanding shares.

Empirical Review

Babarinde and Abdulmajeed (2020) investigated the effect of inflation on the capital market in Nigeria, using annual time series data obtained from the Central Bank of Nigeria and World Development Indicators for the years 1981-2018. The Canonical Co-Integrating Regression (CCR) technique was applied to the data after descriptive analysis, augmented Dickey-Fuller (ADF) unit root, and Johansen co-integration tests were conducted. Co-integration analysis indicates that **a** long-run equilibrium relationship exists between inflation and the capital market in Nigeria. The CCR estimates showed evidence of a negative significant effect of inflation on the capital market in Nigeria. Owolabi and Adegbite, (2013), examined the effect of inflation on capital market performance in Nigeria. They made use of secondary data obtained from the central bank of Nigeria statistical bulletin and the Security exchange commission (SEC) covering the period of 1970 to 2010. Multiple regressions were employed to analyze data on variables such as inflation rate, market capitalization, All-Share index, market volume, market turnover, and Gross Domestic Product with the adjusted R^2 which is significant at 0.1821(18.2%), it presages that inflation accounted for 18.2% of the variation in the influence of the capital market performance. The effect of inflation on the performance of the Nigerian capital market is weak. All the measures showed a negative relationship to inflation except MVOL which showed a deviation from a priori expectation as revealed by the positive correlation between inflation and the market volume. It is therefore concluded that there is a negative relationship between inflation and capital market performance.

Gerolamo (2001) identifies the impact of inflation on the interest rate as a channel through which it affects the stock market and ultimately economic growth. In studying the impact of Real Gross Domestic Product (RGDP), inflation, and interest rates on stock prices of quoted companies in Nigeria, Musa (2021) examined the interrelationship between interest rate and inflation rate in Nigeria. Findings established that interest rates were weak instruments to curb inflation in the short run but inclined to be significant and relevant instruments in the long run.Daferighe and Aje (2009) conclude that inflation and interest rates are negatively correlated with stock prices. The inflation illusion hypothesis of Modigliani and Cohn (1970) points out, that the real effect of inflation is caused by money illusion.Feldstein's (1980) variant of the inflation and stock market returns theoretical nexus, suggests that inflation erodes real stock returns due to an imbalance in the tax treatment of inventory and depreciation resulting in a fall in real after-tax profit. Feldstein further observed that the failure of share prices to rise during substantial

inflation was because of the nominal capital gains from tax laws particularly, historic depreciation cost (Friend and Hasbrouck, 1981). Aperigis and Eleftheriou (2002) agreed that there is a negative link between inflation and stock returns in Greece than the interest rate and stock returns. Ugur (2005) brought out that expected inflation and real returns are not correlated. The results suggest there is a negative relationship between inflation and stock returns which may be caused by the negative impact of unexpected inflation on stock returns. Tamtom (2002) indicated that a negative long-run relationship exists between stock prices and inflation; in turn implying that higher stock prices are associated with lower inflation contrary to recent proposals. It is a common belief that inflation is advantageous to common stock. This is major because it is argued that inflation increases the returns to shareholders since the price of products rises faster than wage rates. The expected relationship between inflation and returns to owners of equity would be valid if business firms were debtors and if the current interest rates ondebt finance failed to reflect the future changes in the price level.

Omoke and Ugwuanyi (2010) tested the relationship between money, inflation, and output by employing co-integration and Granger-causality test analysis. The findings revealed no existence of a co-integrating vector in the series used. The money supply was seen to Granger cause of both output and inflation. The result suggests that monetary stability can contribute toward price stability in the Nigerian economy since the variation in price level is mainly caused by money supply and also conclude that Journal of Emerging Trends in Economics and Management Sciences (JETEMS) 5(1):93-99 (ISSN: 2141-7016) 95 inflation in Nigeria is to a large extent a monetary phenomenon. Kolari (2001) using stock price and goods price data from six industrial countries showed that the long-run Fisher elasticity of stock prices concerning goods prices exceeds unity and range from 1.04 to 1.65 which supported the Fisher effect that inflation has a negative short-run effect on stock returns but turnspositive over longer horizons. According to Bekaert and Engstrom (2007), the inflation illusion suggests that when expected inflation rises, bond yields duly increase, but because equity investors incorrectly discount real cash flows using nominal rates, the increase in nominal yields leads to equity underpricing and vice versa. Feldstein's (1980) variant of the inflation and stock market returns theoretical nexus, suggests that inflation erodes real stock returns due to an imbalance in tax treatment of inventory and depreciation resulting in a fall in real after-tax profit. Patra and poshakwale (2006) used the error correction model (ECM) to conduct a study on the impact of economic variables on market returns in Greece from 1990 to 1999. Empirical results show that some macroeconomic variables like money supply, inflation, the volume of trade, and exchange have both short-run and long-run relationships with a stock price in equilibrium in Greece while there was no short-run or long-run relationship noticed between exchange rate and stock prices.

Onuora, Ezejiofor and Erhinyoja (2016) set out to examine the effects of inflation on the performance of the Nigerian capital market since the democratic dispensation. Specifically, the study determined the extent to which inflation has affected all share indexes, stock market capitalization, and the value of domestic shares traded. Ex Post facto research design was adopted. Data obtained were analyzed and the coefficient correlation coefficient statistical technique was used to test the three formulated hypotheses with aid of SPSS version 20.0. The study found that there is a negative correlation between inflation rate and all share index in Nigeria and there is a negative significant correlation between inflation rate and Nigerian market capitalization. Another level of inflation rate has a negative correlation with the value of domestic shares trading in Nigeria. The implication of this study is that inflation increases and when there is a decline in monetary growth rate, there is a strong relationship between an increase in money supply and inflation. This means that inflation is responsible for inefficiencies and non-performance of the capital market.

Orajaka and Okeke (2017) explored the inflationary trends to determine their impact on Nigeria Stock Exchange Market. Four variables were used to validate the reliability of the research work, namely: inflationary rate, total value of the Nigerian Stock Exchange market, government expenditure, and currency exchange rate ranging from 1980 to 2014. General regression statistical tool was used to analyze the data to determine the relationship between the dependent and independent variables. The study

revealed that inflation, government expenditure, and exchange rate are significant to the total value of Nigeria Stock Exchange transactions. Tothat extent, the researchers concludedthat the Inflationary trend to a large extent has a tremendous effect on the Nigerian Stock exchange market. Gbenga andTajudeen (2020), in their work discovered that most studies reported evidences of a negative relationship between inflation and the capital market while some reported evidences of a positive relationship and yet some showed evidences of no relationship. Some of those studies mentioned by them that sow evidence of negative relationships are Al-Abbadi and Abdul-Khaliq (2017), Jepkemei (2017), Akani and Uzobor (2015), Khumalo (2013)). Those who reported showing evidence of the positive connection between the two variables are Ibrahim and Agbaje (2013), Kaur (2017), Lawal (2016), Mbulawa (2015), Omotor (2010)). The third category which shows inflation to be of no significance in predicting the movement in capital market performance includeauthors such as Ahmadi (2016), Floros (2004), Qamri et al (2015), and Sokpo et al (2017). The gap in the literature is that no one has studied the effect of inflation on the capital market performance of fast moving consumer goods firms in Nigeria.

Theoretical Framework

Several theories have been propounded which can be used to explain how inflation affects the performance of the stocks of listed companies in the capital market. Some of them that are relevant to this study include Irvin Fisher's Effect theory, Fama's Proxy Hypothesis, Arbitrage pricing theory.

Fisher Effect

The Fisher Effect is an economic theory created by economist Irving Fisher that describes the relationship between inflation and both real and nominal interest rates. The Fisher Effect states that the real interest rate equals the nominal interest rate minus the expected inflation rate. Therefore, real interest rates fall as inflation increases, unless nominal rates increase at the same rate as inflation. Fisher's equation reflects that the real interest rate can be taken by subtracting the expected inflation rate from the nominal interest rate. In this equation, all the provided rates are compounded. (Adam Hayes, 2022). Fisher Effect Theory or Fisher Hypothesis postulates a positive relationship between stock returns and inflation based on the understanding that assets ought to maintain their values against inflation (Fisher, 1930). According to the scholar, the expected rate of return is an embodiment of both real return and the expected rate of inflation. He assumes no relationship exists between the real rate and the monetary sector. Thus, based on this theory, stock investment can serve as a hedge against the risk of inflation. This is because financial assets like stocks, which represent claims to real assets, should be positively related toexpected inflation. (Babarinde.andAbduljameed, 2020)

Fama's Proxy Effect Hypothesis

Fama (1981) in his Proxy Hypothesis explained that stock returns are negatively related to inflation because stock returns are positively related to real activity and real activity is negatively related to changes in the level of prices; a correlation between inflation and stock market returns is not a causal one; rather, it is a spurious relationship of dual effect. (Babarinde & Abduljameed, 2020). According to TakatoHiraki (1985),Fama's Proxy Effect Hypothesis states that the negative relationship between inflation and real activity induces the spurious negative correlation between equity returns and inflation. The hypothesis implies that measures of real activity included as explanatory variable in stock return regressions should eliminate the spurious correlation.

Arbitrage Pricing Theory

The arbitrage pricing theory was developed by the economist Stephen Ross in 1976, as an alternative to the capital asset pricing model (CAPM). Unlike the CAPM, which assume markets are perfectly efficient, APT assumes markets sometimes misprice securities, before the market eventually corrects and securities move back to fair value. Using APT, arbitrageurs hope to take advantage of any deviations from fair market value. Arbitrage pricing theory (APT) is a multi-factor asset pricing model based on the idea that an asset's returns can be predicted using the linear relationship between the asset's expected return and a number of macroeconomic variables that capture

systematic risk. It is a useful tool for analyzing portfolios from a value investing perspective, in order to identify securities that may be temporarily mispriced. (Hayes, 2021)

METHODOLOGY

This study adopts a post-factor and descriptive research design using the regression – analysismethod. The ex-post factor design involves the experimental study of examining the effect of inflationary trends on the Capital Market Performance of fast-moving consumer goods companies in Nigeria. The study shows the empirical analysis of annual financial statements often listed consumer goods companies in the Nigerian Exchange Group. The choice of ex-post factor and regression analysis is because the study is aimed at examining the effect of inflationary trends on the capital market performance of fast-moving consumer goods in Nigeria. The population of the study covers all the consumer goods companies in Nigeria of the period **2**010 to 2020. A sample size of ten companies was selected using a simple random sampling technique as the basis of selection. The data of the ten listed fast-moving consumer goods companies from 2010 to 2021 used in the study was collected from secondary sources, basically from the statistical bulletin of the Central Bank of Nigeria**2020** edition.

Technique for Data Analysis and Model Specification

The Panel regression analysis was used in this study and the analysis incorporated descriptive statistics, which was conducted to examine the linear association between Inflationary Trendon Capital Market Performance of listed fast-moving consumer goods companies in Nigeria.

$MKTS = B_o + \beta_1 CPI + \beta_2 INTR + £it….3.i$

Where:

β_o= The autonomous parameter alternate
$\beta_1 – \beta_2$ = Parameter coefficient of inflation and Capital Market
MKTS = Market Share
CPI = Consumer price index (Proxy of inflation rate)
INTR = Interest Rate
£it = Stochastic error t

RESULT AND DISCUSSION

Data Presentation

The data for market shareis the dependent variable (Y) whereas CPI, and INTR as the independent variables. Data on these variables are presented in the table below.

Table 1: Time series data on MKTS, CPI, and INTR (Data ranging from 2010-to 2021)

YEAR	MKTS	CPI	INTR
2010	12.42	8.61	3.55
2011	20.81	19.37	10
2012	7.7	3.34	11.75
2013	23.21	0.37	11.5
2014	17.82	11.61	13
2015	7.44	4.19	11.75
2016	5.72	23.71	12
2017	11.29	42.31	19.2
2018	54.51	5.94	17.6
2019	50.47	6.88	24.6
2020	7.36	10.25	27.7

2021	13.01	11.36	20.8

Source: Annual report

Empirical Results

As the performance of theoretical postulation is no guarantee, but only an indicator of what we may expect in practice, empirical testing of the time series data of the variables is necessary.

Unit Root Test

The Augmented Dickey-Fuller (ADF) was used to test for the unit root in the individual variable. The test was done based on the following hypothesis;

H_0: variable is non-stationary, that is, the variable has no unit root.

H_1: variable is stationary, that is, the variable has a unit root.

The results from the Augmented Dickey-Fuller test for unit root are summarized below.

Table 4.1: Result of the ADF Test for Unit Root

Variables	ADF test statistics	5% critical value	Order of Integration
MKTS	-2.158002	-1.950117	I(1)
CPI	-4.748925	-3.536601	I(1)
INTR	-6.725161	-3.536601	I(1)

From the tabular illustration (table 4.1) above, the market share (MKTS), consumer price index (CPI), and interest rate (INTR) are not stationary at level form. However, they are all stationary at first difference. That is, they are integrated at order one; I(1). Not having a stationarity time-series data at level form, indicates not having a short-run relationship among the individual time-series data, this result is expected since most macro-economic time series data are known to exhibit such behavior. Since the variables are non-stationary at level form, there is a need to conduct a co-integration test. The essence is to show that although all the variables are non-stationary, the variables may have a long-term relationship that is the variables may be co-integrated and will not produce a spurious result.

Co-integration Test Result

According to Gujarati (2004), a regression involving non-stationary time series variables will produce a spurious (non-meaningful) result. But if such variables are co-integrated, having a long-run relationship, the result will therefore be acceptable. Econometrically speaking, two variables are co-integrated, if they have a long-run equilibrium relationship between them, (Gujarati, 2004). To test for co-integration among the variables, this study adopted ADF (Augmented Dickey-Fuller) test on the regression residuals as proposed by Engel and Gujarati (1987). The ADF unit root test on the residuals works with the same decision rule as the unit root test. The co-integration test result is summarized as follows:

Co-integration Test Result

Null Hypothesis: ECT has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.801775	0.0277
Test critical values:	1% level	-4.226815	
	5% level	-3.536601	

	10% level		-3.200320	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ECT)
Method: Least Squares
Date: 03/23/22   Time: 12:03
Sample (adjusted): 2010 2021
Included observations: 11 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECT(-1)	-0.602334	0.158435	-3.801775	0.0006
C	-0.005532	0.012976	-0.426346	0.6725
@TREND("1981")	0.000341	0.000581	0.587097	0.5610

R-squared	0.305509	Mean dependent var	0.000839
Adjusted R-squared	0.264657	S.D. dependent var	0.041525
S.E. of regression	0.035609	Akaike info criterion	-3.754853
Sum squared resid	0.043111	Schwarz criterion	-3.624238
Log-likelihood	72.46478	Hannan-Quinn criteria.	-3.708805
F-statistic	7.478367	Durbin-Watson stat	1.904989
Prob(F-statistic)	0.002034		

From the result above, the ADF test statistics (-3.801775) is greater than the 5% critical value (-3.536601) in absolute terms. This implies that the residuals are stationary (that is, the variables are co-integrated or that the linear influence of the independent variables cancels out).

Error Correction Mechanism Result and Interpretation

ECM Test Result

Dependent Variable: D(MKTS)
Method: Least Squares
Date: 03/23/22   Time: 12:04
Sample (adjusted): 2010 2021
Included observations: 11 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.044833	0.007079	6.333043	0.0000
D(CPI)	4.510306	5.10E-06	3.884460	0.0330
D(INTR)	-0.142509	0.212418	-2.670888	0.0071
ECT(-1)	-0.476928	0.159954	2.981667	0.0054

R-squared	0.312543	Mean dependent var	0.042191
Adjusted R-squared	0.226611	S.D. dependent var	0.041292
S.E. of regression	0.036313	Akaike info criterion	-3.668185
Sum squared resid	0.042197	Schwarz criterion	-3.450493

Log-likelihood	72.86142	Hannan-Quinn criteria.	-3.591438
F-statistic	3.637090	Durbin-Watson stat	1.901125
Prob(F-statistic)	0.014932		

From table 4.3 above, the magnitude of the short-run disparity is -0.4769, that is to say, the degree of the short-run dynamics is 47%. This shows a relatively high speed of adjustment to equilibrium after a shock.

Regression Result

In the regression result, the variables under consideration are market share (dependent variable), consumer price index, and interest rate (independent variables). From the result, the estimated coefficient values of b_0, b_1, and b_2 are 0.044833, 4.510306, and -0.142509 respectively.

The regression results A priori test is presented as follows

Dependent Variable: D(MKTS)
Method: Least Squares
Date: 03/23/22   Time: 12:04
Sample (adjusted): 2010 2021
Included observations: 11 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.044833	0.007079	6.333043	0.0000
D(CPI)	4.510306	5.10E-06	3.884460	0.0330
D(INTR)	-0.142509	0.212418	-2.670888	0.0071
ECT(-1)	-0.476928	0.159954	2.981667	0.0054

R-squared	0.312543	Mean dependent var	0.042191
Adjusted R-squared	0.226611	S.D. dependent var	0.041292
S.E. of regression	0.036313	Akaike info criterion	-3.668185
Sum squared resid	0.042197	Schwarz criterion	-3.450493
Log-likelihood	72.86142	Hannan-Quinn criteria.	-3.591438
F-statistic	3.637090	Durbin-Watson stat	1.901125
Prob(F-statistic)	0.014932		

Evaluation of Regression Results

Evaluation Based on Economic Criterion

This subsection is concerned with evaluating the error correction mechanism result based on a priori expectations. The signs and magnitude of each variable coefficient are evaluated against theoretical expectations.The signs of some of the coefficient of the variable from the estimated model are in line with a priori expectations. The consumer price index haspositive relationships with market share while the interest rate has a negative relationship with market share (MKTS). The constant term is 0.044833, which means that the model passes through the point 0.044833 mechanically, if the independent variables are zero, Gross Domestic Product would be 0.044833, (Gujarati, 2007). The estimated coefficient for the consumer price index is 4.510306, this implies that if other variables affecting Gross Domestic Product are held constant, a unit increase in the consumer price index, will lead to a 4.510306 unit decrease in market share on average. Similarly, the estimated coefficient of interestrate is -0.142509, this means that holding every other variable that affect market share constant, a unit increase in interest rate will bring about a 0.142509 unit decrease market share.

Evaluation Based On Statistical Criterion

This subsection applies the R^2, the t-test, and the f-test to determine the statistical reliability of the estimated parameters. These tests are performed as follows;

R^2–Result and Interpretation

The coefficient of determination, R^2, is given as 0.312543; this implies that 31.2543 percent of the variation in Gross Domestic Product is being explained by the variations in the consumer price index and interest rate. Thus, the R^2 which yielded 31.2543 percent means that the explanatory powers of the independent variables: the consumer price index and the interest rate, over the dependent variable (MKTS), are low. Hence, the variables have no better or even worse goodness of fit.

t-Test Result and Interpretation

We also employ the 95% confidence interval or 5% level of significance (that is, 5/100=0.05, 0.05/2=0.025) and 39 as our degree of freedom.

From the distribution table, $t_{0.025,39}$ = 2.042

The result of the t-test of significance is shown in table 4.5 below:

The result of the t-test is presented below and evaluated based on the critical value (2.042) and the value of calculated t-statistics for each variable.\

Table 5: Result of t-Test of Significance

Variables	t-computed (t*)	t-tabulated ($t_{a/2}$)	Conclusion
CPI	3.884460	2.042	Significant
INTR	-2.670888	2.042	Significant

Significant (Reject H_o; accept H_1),

Insignificant (Accept H_o).

From the t-test result above, for CPI, $t^* > t_{a/2}$, that is, 3.884460>2.042, therefore the null hypothesis is rejected. Hence consumer price index is statistically significant, thus consumer price index has a significant impact on market share.

For INTR, $t^* > t_{a/2}$, that is, -2.670888>2.042, therefore the null hypothesisis was rejected. Hence interest rate is statistically significant, thus interest rate has a significant impact on market share.

Result and Interpretation of f–Test of Significance

The degree of freedom for the numerator (V_1) and the denominator (V_2) are given as K-1 and n-K

Where:

N= sample size= 11
K= number of parameters including the constant term= 4

V_1=3-1=2, V_2=11-3=8, df=(2,8) at 5% level of significance and df=(2,8), $f_{0.05}$= 2.92 and F*= 3.637090. Since f*>$f_{0.05}$, therefore, the alternative hypothesis is accepted.

This implies that the independent variables (CPI and INTR), have a joint influence on market share. Thus, the entire regression plane is significant.

Evaluation Based on Econometric Criterion

In this subsection, the following econometric test is used to evaluate the result obtained from our model: autocorrelation and normality.

Result and Interpretation of Autocorrelation Test

Using the Durbin-Watson (D-W) statistic, the region of no autocorrelation (positive or negative) is given as follows:
du< d*< (4-du)
du= 1.722

d*= 1.901125
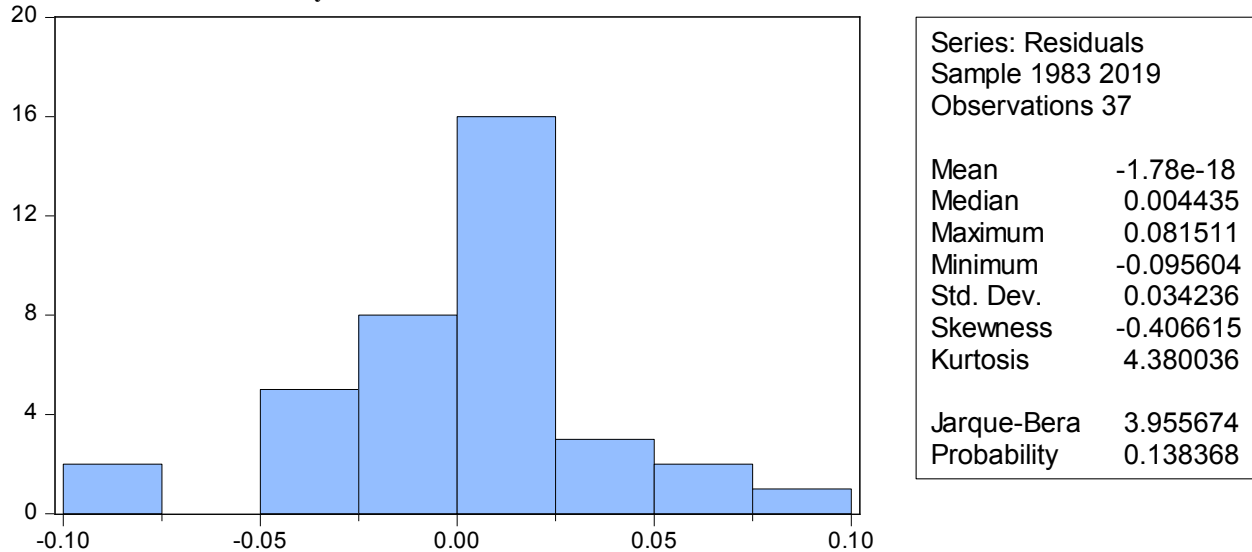(4-du)= 4 – 1.722= 2.278
By substitution, the region becomes:
1.722<1.901125<2.278

The result shows that autocorrelation problem is absent in the model as the computed Durbin-Watson (D-W) statistic falls within the zero autocorrelation regions.

Normality Test Result and Interpretation

The Normality test will be done using the Jarque-Bera test of normality. Jarque-Bera test of normality is hinged on the hypothesis that K is close to or exactly 3 and S is close to or exactly 0, thus making the JB value close to or equal to 0, which is the condition for normal distribution.

Table 6 Result of Normality Test

Series: Residuals	
Sample 1983 2019	
Observations 37	
Mean	-1.78e-18
Median	0.004435
Maximum	0.081511
Minimum	-0.095604
Std. Dev.	0.034236
Skewness	-0.406615
Kurtosis	4.380036
Jarque-Bera	3.955674
Probability	0.138368

From tshe normality table, the probability of Jarque-Bera is given as 0.138368. This is greater than 0.05, hence the residuals are normally distributed (ND).

Evaluation of Research Hypotheses

Hypothesis one: The null hypothesis is rejected, which states that the consumer price index has no significant impact on the market share judging from the t-Test result because the computed t-values(t^*) are greater than the tabulated t-values($t_{0.025}$).

Hypothesis Two: The null hypothesis is rejected, which states that interest rate has no significant impact on the market share judging from the t-Test result because the computed t-values(t^*) are greater than the tabulated t-values($t_{0.025}$).

RESULT AND DISCUSSION

Having estimated the parameters of the model numerically, with the use of multiple linear regression on the application of the ordinary least squares (OLS), this study reveals that the consumer price index has a positive and significant relationship with the market share, this implies that an increase in the units of consumer price index will lead to a significant increase in the market share in the period analyzed. More so, the study reveals that interest rates have negative and significant relationships with market share, which implies that an increase in the units of interest rate will lead to a decrease in the market share in the period analyzed.

CONCLUSIONAND RECOMMENDATIONS

Based on the findings of this study, the researcher concludes that the consumer price index has a positive relationship and insignificant impact on market share over the periods covered. In a similar vein, the study concludes

that interest rate has a negative relationship with the market share in Nigeria. Based on the findings of this study, the following policy recommendations are necessary, to encourage and boost foreign direct investment in Nigeria.

i. The results of the study indicate that the consumer price index haspositive relationship with market share in Nigeria. Hence, the government should make necessary and informed trade policies capable of attracting more investors into the country that will bring down the level of a consumer price index. This would go a long way in enhancing the Nigerian economy.

ii. Judging from the significant impact of all the variables on market share in Nigeria, the government should meticulously ensure in its entirety, that commercial banks reduce the rate of interest rate to promote an increase in domestic investment.

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