EFFECT OF SELECTED MACROECONOMIC VARIABLES ON THE PERFORMANCE OF THE NIGERIAN STOCK MARKET

[1]Adesola, Wasiu Adebisi; [1]Uket, Eko Ewa; [1]Arikpo, Oka Felix; [1]Fabian Okwejie

[1]Department of Accountancy, Faculty of management Science
Cross River University of Technology

ABSTRACT

This study looked at the problem of how and to what degree the Nigerian stock market responds to the changes in macroeconomic variables. This study examined the effect of selected macroeconomic on the performance of the Nigerian capital market, utilizing time series data covering the period from 1985 to 2013. The study employed the Error Correction Mechanism(ECM) methodology in estimation of the relevant equation. However, before the final result was estimated, the study was tested for unit root using the Augmented Dickey-Fuller(ADF) test and Philip-Perron(PP) test. The study also tested for the long run equilibrium relationship among the variables using the Johansen-Jesulius multivariate co-integration approach. The Granger causality test was also carried out to investigate the direction of causality among the variables captured. The result of the co-integration test showed that the variables are co-integrated and hence there is a long run relationship among them. The result of the Granger causality test showed that there were bi-directional relationships between market capitalization and broad money supply and market capitalization and savings. The Granger causality result also revealed that there is a unidirectional causality relationship running from gross domestic prod, and domestic investment to market capitalization and from market capitalization to financial development. The results of the market capitalization equation showed that savings, domestic investment, gross domestic product and financial development have positive and significant effect on stock market performance in Nigeria during the period under review. On the other hand, the results showed that broad money supply and inflation rate have negative relationship with stock market performance in Nigeria. Based on the results, the study recommended that there is need for government to implement reform measures that will bring about efficiency and performance in the Nigerian stock market. This can be achieved by raising savings deposit rate so as to encourage more savings from the people. There is also need to provide basic infrastructures, maintaining stable macroeconomic atmosphere in Nigeria. Lastly there is need to

implement policies that will promote domestic investment by lowering the cost of doing business in Nigeria.

Keywords: Stock market capitalization, inflation, money supply, savings, investment, Gross Domestic Product, Private Sector credit

INTRODUCTION

The desire of any economy to attain a sustainable growth rate through an investment friendly environment cannot be realized without a vibrant stock market. This is so because a stock market is generally believed to be the heartbeat of any economy due to its ability to respond almost instantaneously to fundamental changes in the economy (Nzotta, 2004). The Nigerian stock market is not an exception to this as it is the nucleus of growth. This is so as it performance determines and is being determined by the performance in macroeconomic variables.

It is a known fact that changes in macroeconomic variables influence the performance of the Nigerian stock market. What is not known however is the extent which the Nigerian stock market responds to the changes in macroeconomic variables. Again, the question which imperative measures are necessary to check or cushion the shocks macroeconomic variables may have on stock performance is also relevant? The prevailing financial crisis and the sensitiveness of stock market to external shock resulting from the global financial meltdown have affected the performance of the macroeconomic fundamentals in the economy (Amold, 1998). The Nigerian economy has experienced mixed macroeconomic performance over the years. Likewise, the Nigerian stock exchange has also undergone series of reforms to measure up with other emerging markets in the world and increase the influence of foreign investors. This is done to promote the key sectors of the economy and to make the market accessible for raising capital and to make it attractive to both foreign and local investors.

Over the past few decades, the interaction between the capital market and macroeconomic variables has been a subject of interest among financial economies and practitioners. It is often argued that stock prices are determined by some fundamental macroeconomic variables. Investors generally believe that monetary policy and macroeconomic factors have large influence on the volatility of stock price. This motivates many researchers in Nigeria to investigate the relationship between share returns and macroeconomic variables. Their studies have provided different findings as a result of the considered macroeconomic factors used and the research method adopted (Christopher, Minsoo, Huahwa, & Jun, 2006).

The issue of determining the effect of selected macroeconomic variables such as inflation, money supply, savings, Gross Domestic Product (income), investment and credit to private sector on the performance of the Nigerian Capital Market using Nigeria Market Capitalization on

one hand, and Nigeria Stock Exchange (NSE) All share index respectively, as proxies for Nigeria Capital Market Constitutes the problem this study proffer solution to.

OBJECTIVES OF THE STUDY

The main objective of this study is to ascertain the effect of selected macro-economic variables on the performance of the Nigerian Stock Market. Specifically, the study is aimed at achieving the following objectives:

(i)   To determine the effect of inflation on stock market capitalization in Nigeria;

(ii)   To assess the effect of Gross Domestic Product on stock market capitalization in Nigeria;

(iii)   To examine the effect of money supply on stock market capitalization in Nigeria;

(iv)   To examine the extent to which savings impact on stock market capitalization in Nigeria

(v)   To determine the effect of credit to private sector on stock market capitalization;

(vi)   To assess the effect of investment on stock market capitalization in Nigeria.

LITERATURE REVIEW AND THOERETICAL FRAMEWORK

Theoretical framework

In order to give direction to the empirical investigation, this study was built on the foundation of financial economic theory.

FINANCIAL ECONOMIC THEORY

One way of connecting stock market returns and macroeconomic variables is via the Arbitrage Pricing Theory (APT) (Ross, 1976), where multiple risk factors can explain asset returns. APT holds that the expected returns of financial asset can be modeled as a linear function of various macroeconomic factors or theoretical market indices, where sensitivity to change in each factor is represented by a factor specific beta coefficient. It is often seen as an alternative to the capital asset pricing model (CAPM), since it has more flexible assumptions. Whereas the Capital Asset Pricing Model uses the market's expected return, the APT uses the risky assets expected return and the risk premium of a number of macroeconomic factors (Ross, 1976).

The basis of APT is the idea that the price of a security is driven by a number of factors. These factors could be macroeconomic factors or company specific factors. APT does not rely on measuring the performance of the market. Instead it directly relates the price of the security to

the fundamental factors driving it. The problem with APT is that the theory itself provides no indication of what these factors are, so they need to be determined empirically (Ross, 1976).

While early empirical papers on APT focused on individual security returns, it may also be used in an aggregate stock market framework, where a change in a given macroeconomic variable could be seen as reflecting a change in an underlying systematic risk factor influencing future returns. Most of the empirical studies on APT linking the state of the macro-economy to the stock market returns are characterized by modeling a short run relationship between macroeconomic variables and the stock price in terms of first difference, assuming trend stationarity (Ross, 1976).

An alternative, but not inconsistent approach is the discounted cash flow or present value model (PVM). This model relates the stock price to future expected cash flows and the discount rate of these cash flows. Again all macroeconomic factors that influence future expected cash flow or the discount rate by which these cash flows are discounted should have an influence on the stock price. The advantage of the PVM is that it can be used to focus on the long-run relationship between the stock market and macroeconomic variables. The relationship between stock prices, earnings and expected dividends. It is found that a long-term moving average of earnings estimates predict dividends and the ratio of this earning variables to current stock price is powerful in predicting stock returns over several years. They conclude that these factors make stock prices and returns too volatile to agree with a simple present value model (Campbell and Shiller, 1988).

There are basically five schools of thought on stock price behavior with each contradicting one another and considerable doubt exist as to which one best explain stock price behavior in Nigeria context; They include:

a)   The fundamentalist school
b)   The technicalist school
c)   The random-Walk hypothesis school.
d)   The behavioralist school of finance and
e)   The macroeconomic hypothesis school.

The fundamental view

This theory states that, at any point in time, an individual security has an intrinsic or true value, which is the present value of the future receipts accruing to the security holder. The theory also holds that, the intrinsic value of the security depends on some essential factors affecting the company, the industry and the economy.

The chief discussion variables in fundamental analysis are earnings and dividends. Earning depends on the relationship between expected sales and costs which are affected by several factors internal to the firm's operating environment. Therefore, the fundamentalist forecast stock prices on the basis of economic, industry and company statistics (Prattern, 1993).

The technical theory

The technical school on the other hand, opposes the fundamentalist's argument. Technical analysis, also referred to as Chartism, hold the view that in attempting to predict the future course of share price. Chartists argue that share prices move in trends and patterns, which periodically repeat themselves so that the key to making gains is to recognize these patterns before others. According to technical analysis, it really does not matter in which industry or market the company operates, the use of chart is sufficient to detect the likely movement in the prices of its share (Foley, 1991).

Technical analysts engage themselves in studying changes in market prices, the volume of trading and investors attitude.

Technical analysis is faulty in the sense that it does not have any basis, nor does it want to investigate to know why a particular share price is predicated upon rise or fall. All that is important is that the movement is indicative of a rise or a fall (Prattern, 1993).

The random –walk theory

Both the "technical" and "fundamental" analyses have been challenged by scholars who subscribe to the random-walk hypothesis, which see stock price movements in terms of a probability distribution of different possible outcome.

The random – walk theory states that the future price of stocks is completely independent of past trends. In other words, there is statistically independent relationship between future prices of stock and their past prices.

Behavioral view

The behavioral school of finance holds that market might fail to reflect economic fundamentals under three conditions, when all these apply, theory predicts that pricing biases in financial markets can be both significant and persistent. The first behavioral condition is irrational behavior. It holds that investor behave irrational when they don't correctly process all the available information while forming their expectations of a company's future performance. The second is systematic patterns of behavior which holds that even if individual investors decided to

buy or sell without consulting economic fundamentals, the impact on share prices would be limited.

Lastly, limits to arbitrage in financial market ascertain that when investors assume that a company's recent strong performance alone is an indication of future performance; they may start bidding for shares and drive up the price. Some investors might expect a company that surprises the market in one quarter to go on exceeding expectation.

Macroeconomist view

The macroeconomic approach attempts to examine the sensitivity of stock prices to changes in macroeconomic variables. The approach posits that stock prices are influenced by changes in money supply, interest rate, inflation and other macroeconomic indicators. It employs a general equilibrium approach, stressing the interrelations between sectors as central to the understanding of the persistence and co-movement of macroeconomic time series, based on the economic logic, which suggests that everything close depend on everything else.

EMPIRICAL LITERATURE

Chen, Roll and Ross (1986) was the first study to select macroeconomic variables to estimate U.S. stock returns and apply the APT models. They employed seven macroeconomic variables, namely term structure, industrial production, risk premium, inflation, market return, consumption and oil prices in the period of Jan. 1953 – November 1984. They noted that industrial production, changes in risk premium, twist in the yield curve, measure of unanticipated inflation or changes in expected inflation during the periods when these variables are highly volatile, are significant in explaining stock returns. However, consumption, oil prices and market index are not priced by the financial market. They conclude that asset prices react sensitively to economic news, especially to unanticipated news.

Chen (1991), performed the second study covering the USA, findings suggest that future market stock return could be forecasted by interpreting some macroeconomic variables such as default spread, term spread, one-month treasury bill rate, industrial production growth rate, and dividend-price ratio.

Poon and Taylor (1991), parallel the Chen, Roll and Ross (1986) study on the UK market. Their result shows that macroeconomic variables do not appear to affect share returns in the UK as they do in the US. They suggest that either different macroeconomic factor have an influence on share returns in the UK or the methodology employed by Chen, Roll and Ross (1986) is inefficient.

Through the APT, Brown and Otsuki (1990) explore the effects of money supply, production index, crude oil price, exchange rates, call money rates and a residual market error on the Japanese stock market. They observed that all these factors are associated with significant risk premium in Japanese equities.

Mukherjee and Naka (1995) use vector error correction approach to model the relationship between Japanese stock return and macroeconomic variables, namely exchange rate, inflation rate, money supply, real economic activity, long-term government bond rate and call money rate.

Flannery and Protopapadakis (2002) re-evaluate the effect of some macroeconomic series on us stock. Among these series six macroeconomic variables, namely balance of trade, housing rates, employment, consumer price index, MI and producer price index seem to affect stock returns. On the other hand two popular measure of aggregate economic activity (real GNP and industrial production) do not appear to be related with stock returns.

Ibrahim and Aziz (2003) investigate the relationship between stock prices and industrial production, money supply, consumer price index and exchange rate in Malaysia. Stock prices are found to have positive long-term relationship with industrial production and consumer price index. On the contrary, they found out that stock prices have a negative association with money supply and exchange rate.

Serkan (2008) investigates the role of macro-economic factors in explaining Turkish stock returns. He employed macroeconomic factor model from the period of July 1997 to June 2005. The macroeconomic variables considered are growth rate of industrial production index, change in consumer price index, growth rate of narrowly defined money supply, change in exchange rate, interest rate, growth rate of international crude oil prices and return on MSCI World Equity index. He found that exchange rate, interest rate and world market return seem to affect all of the port-folio returns, while inflation rate is significant for only three of twelve portfolios. Also, industrial production, money supply and oil prices do not appear to have significant effect on stock returns in Turkey.

Adam and Tweneboah (2008) examine the impact of macroeconomic variables on stock prices in Ghana using quarterly data from 1991 to 2007. They examined both the long-run and short-run dynamic relationship between the stock market index and economic variables namely, inward foreign direct investment, Treasury bill rate, con-price index, average oil prices and exchange rates using co-integration test, Vector Error Correction Model (VECM). They found that there is con-integration between macroeconomic variables and stock prices in Ghana indicating long-term relationship. The VECM analysis shows that the lagged values of interest rate and inflation

have significant influence on the stock market. Also, the inward foreign direct investments, oil prices and the exchange rate demonstrate weak influence on price changes.

Attempt has been made by Nigerian researchers to investigate the relationship between macroeconomic variables and stock prices. Amadi, Onyema and Odubo (2002) employed multiple regression analysis to estimate the functional relationship between money supply, inflation, interest rate and stock prices in Nigeria. Their study revealed that the relationship between stock prices and macroeconomic variables are consistent with theoretical postulations and empirical findings in some countries. Their finding also revealed that the relationship between stock prices and inflation does not agree with some other works done outside Nigeria.

Nwokoma (2002), attempt to establish a long-run relationship between the stock market and some macroeconomic indicators. His result shows that only industrial production and level of interest rates as represented by the three months commercial bank deposit rate have a long-run relationship with the stock market. He also found that the Nigeria market responds more to its past prices than changes in the macroeconomic variables in the short-run.

Ologunde, Elumilade and Asaolu (2006) examine the relationship between stock market capitalization rate and interest rate. They found that the prevailing interest rate exerts positive influence on stock market capitalization rate. They also found that government development stock rate exerts negative influence on stock capitalization rate and prevailing interest rate exerts negative influence on government development stock rate.

Maku and Atanda (2009) used error correction model to examine the relationship between stock market performance and six macroeconomic variables which includes – inflation, money supply, savings, Gross Domestic Product (income), investment and credit to private sector. They found that the NSE all share index is consistently determined by inflation, money supply, savings, Gross Domestic Product (income), investment and credit to private sector in both the short-run and long-run. This implies that investors in Nigeria should pay more attention to the significant macroeconomic variables mentioned above in their investment decisions.

A number of studies have been conducted to explore the variations of the capital market to macroeconomic variables theoretically and empirically. Some of these studies focused on the relationship between stock market prices and fundamental economic activities. The outcome of these studies varies greatly depending on the methodology, environment and the macroeconomic variables selected.

Whereas the relationship between macroeconomic variables and stock prices is well documented for developed countries – (Chen, Roll and Ross 1986), Mukherjee and Naka (1995), Abdullah Hayworth (1993), Poon and Taylor (1991), Clare and Thomas (1994), Hamao (1988), Flannery

and Protopapadakis (2002). Studies conducted in Nigeria have provided different findings – (Akinnifesi, 1987), (Soyode, 1993), (Amadi, Onyema and Odubo, 2002), (Nwokoma, 2002), (Ologunde, Elumilade and Asaolu, 2006), (Maku and Atanda, 2009).

Maku and Atanda (2009) attempted to investigate the short-run and long-run relationship between the NSE All share index and the key macroeconomic variables, as well as analyse the implications of economic shocks on the share prices using the error correction model and Engle-Granger Co-integration test. The key macroeconomic variables analysed include: inflation, money supply, savings, Gross Domestic Product (income), investment and credit to private sector. Annual time series data from 1985 to 2013 was employed.

The result obtained could be misleading in view of the fact that the period under study is too short for annual data and may not allow for enough degrees of freedom in the analysis. This paper therefore extends the literature by considering quarterly data in analyzing both the short-run and long-run effect of the selected macroeconomic variables on share returns in Nigeria.

RESEARCH METHODOLOGY

This study adopts both the exploratory and ex-post design. While the exploratory design was used to access the relevant theories and literatures, ex-post facto design was used to collect the data on the study's variables, analyze and test them. The data for this study were predominantly secondary data sourced from CBN Statistical bulletin for the period 1985 – 2013.

The functional relationship between the variables of this study is expressed thus:

MKAP = f (MS, SAV, INF, GDP, INV, CPS_GDP)

Where:

GDPGR = Gross Domestic Product Growth Rate

GCE= Government Capital Expenditure

GRE = Government Recurrent Expenditure

BSD = Budget Surplus or Deficit

MKAP	=	Market Capitalization
MS	=	Money Supply
SAV	=	Savings
INF	=	Inflation

GDP	=	Gross Domestic Product
INV	=	Domestic Investment
CPS_GDP	=	Credit to private Sector/GDP ratio
β_0	=	Constant
β_1- β_6	=	Coefficient of the variables
μ_t	=	Stochastic error term

The apriori expectation of the variables in the models is stated thus:

$\beta_1 > 0$; $\beta_2 > 0$; $\beta_3 < 0$; and $\beta_4 > 0$; $\beta_5 > 0$; $\beta_6 > 0$;

The above functional relationship was transformed into an error correction model thus:

$$\Delta Y = \beta_0 + \beta_1 \Delta X + \beta_2 U_{t-1} + e_t$$

Where:

Δ = first difference operator

e_t = White noise error term

U_{t-1} = one period lagged value of the error term

Estimation Technique

The techniques employed in examining the impact of public expenditure on the growth of the Nigerian economy include the unit root test, cointegration test, error correction model, pairwise granger causality test and chow test. The unit root test was used to ascertain the stationarity property of the variables under study. To achieve this, the study adopted the Augmented Dickey-Fuller (ADF) unit root test. The cointegration test was carried out in order to identify the existence of a long run relationship among the variables of this study. This would be possible with the application of the Johansen cointegration statistics. With the presence of a long run relationship among the variables, this study conducted the short run error correction analyses to ascertain the speed of the adjustment of error in the short run. Here, both the over-parameterization and parsimonious analyses shall be employed together. The pairwise granger causality shall be employed to examine whether or not there is a causal relationship among the variables of the study.

EMPIRICAL RESULTS

Unit root tests

Table 1: Augmented Dickey Fuller(ADF) and Philips Peron Test Result

Variables	ADF Test Statistics		PP Test Statistics		Order of integration
	Level	1st Difference	Level	1st Difference	
LMKAP	-0.409246	-4.388463	-0.406363	-4.336481	I(1)
LMS	-1.455591	-3.218679	-0.720297	-3.436108	I(1)
INFL	-2.514937	-4.616647	-2.514079	-5.366324	I(1)
LSAV	-0.009069	-3.791862	-0.029566	-3.775909	I(1)
LGDP	-2.014367	-4.577905	-2.515433	-4.577905	I(1)
CPS-GDP	-1.762111	-5.250165	-1.677534	-6.155457	I(1)
LINV	-1.663762	-5.077337	-1.663762	-5.191790	I(1)

Test critical values at level: 1% = -3.689194, 5% =-2.971853, 10% = -2.625121

Test critical values at 1st Diff: 1%=-3.699871,5%=-2.976263,10%=-2.622740

Source: Researcher's computation, 2015.

As pre-test criteria, the study employed the unit root test using Augmented Dickey-Fuller (ADF) and Philip Peron complementarily, assuming the presence of intercept only in the model. The results of the unit root test using the Augmented Dickey-Fuller (ADF) and Philip Peron test as presented in table 1 above showed that no variable was stationary at level. Therefore, the null hypothesis of no unit root cannot be rejected. However, the series was stationary when it was differenced once. That means the series was integrated of order 1(1). Given that there is the problem of unit root, the study proceeded to test co-integration relationship among the variables in the model. The co-integration test is presented in table 2 and 3below.

Co-integration test

The results of the co-integration test based on the Johansen and Jesulius (1990) multi-variate approach are presented in tables 2 and Table 3.

TABLE 2: Test Result

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.989090	389.4952	159.5297	0.0000
At most 1 *	0.955932	267.5069	125.6154	0.0000
At most 2 *	0.911806	183.2123	95.75366	0.0000
At most 3 *	0.873852	117.6505	69.81889	0.0000
At most 4 *	0.638477	61.75250	47.85613	0.0015
At most 5 *	0.551246	34.28189	29.79707	0.0142
At most 6	0.282805	12.64734	15.49471	0.1284
At most 7	0.127168	3.672333	3.841466	0.0553

Trace test indicates 6 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

TABLE 3: Maximum eigenvalue test

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.989090	121.9883	52.36261	0.0000
At most 1 *	0.955932	84.29456	46.23142	0.0000
At most 2 *	0.911806	65.56182	40.07757	0.0000
At most 3 *	0.873852	55.89802	33.87687	0.0000
At most 4	0.638477	27.47060	27.58434	0.0517
At most 5 *	0.551246	21.63455	21.13162	0.0425
At most 6	0.282805	8.975011	14.26460	0.2882

| At most 7 | 0.127168 | 3.672333 | 3.841466 | 0.0553 |

Max-eigenvalue test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The results of the co-integration test as presented in table 2 above based on the trace test revealed six co-integrating equations at five percent level of significance. This is because the trace test statistic values in each of the four co integrating equations are greater than the critical values at five percent level of significance.

Unlike the trace test, the maximum eigenvalue test as presented in table 3 above indicated four co-integrating equations at five percent level significance. This is so because the maximum eigenvalue statistics each of the two co-integrating equations are greater than the critical values at five percent level of significance.

Based on these results and since it was possible to establish at least one co-integrating equation, it is therefore concluded that there exists a long run equilibrium relationship among the variables in the model.

Table 4: Granger causality test

The results of the pairwise granger causality test are presented in table 4 below.

Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
INFL does not Granger Cause MKAP	28	0.11402	0.7384
MKAP does not Granger Cause INFL		0.87171	0.3594
MS does not Granger Cause MKAP	28	8.82978	0.0065
MKAP does not Granger Cause MS		34.2288	4.E-06
SAV does not Granger Cause MKAP	28	7.74388	0.0101
MKAP does not Granger Cause SAV		22.4793	7.E-05
GDP does not Granger Cause MKAP	28	27.2902	2.E-05
MKAP does not Granger Cause GDP		0.21888	0.6439
CPSGDP does not Granger Cause MKAP	28	3.8E-05	0.9951
MKAP does not Granger Cause CPSGDP		16.0982	0.0005
INV does not Granger Cause MKAP	28	7.70415	0.0103

MKAP does not Granger Cause INV	2.43675	0.1311

Source: Researcher's Computation, 2015

The results of the granger causality test as presented in table 4 revealed that there were bi-directional relationships between market capitalization and broad money supply and market capitalization and savings.

On the other hand, the results revealed that there is a unidirectional causality relationship running from gross domestic product, and domestic investment to market capitalization and from market capitalization to financial development. However, the results showed that there is no causality relationship between inflation rate and market capitalization.

Analysis of Market Capitalization Equation

Over-parameterized results of Equation 1

The over-parameterized results of the market capitalization equation are presented in table 5 below:

Dependent Variable: D(LMKAP)

Method: Least Squares

Date: 02/10/16   Time: 19:26

Sample (adjusted): 1988 2013

Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.104636	0.223413	-0.468353	0.6592
D(LMKAP(-1))	0.433409	0.254159	1.705270	0.1489
D(INFL)	0.001408	0.005054	0.278661	0.7917
D(INFL(-1))	-0.001822	0.003676	-0.495581	0.6412
D(INFL(-2))	-0.001637	0.002875	-0.569241	0.5938
D(LMS)	-1.254760	0.813568	-1.542292	0.1836
D(LMS(-1))	-3.728525	1.207904	-3.086772	0.0273
D(LMS(-2))	-0.332242	0.810811	-0.409765	0.6989
D(LSAV)	0.680586	0.446361	1.524743	0.1878
D(LSAV(-1))	1.237786	0.755643	1.638058	0.1623
D(LSAV(-2))	2.202845	0.717033	3.072169	0.0277
D(LGDP)	1.920338	0.476250	4.032209	0.0100
D(LGDP(-1))	0.185455	0.408540	0.453946	0.6689
D(LGDP(-2))	0.485023	0.540842	0.896792	0.4109
D(CPSGDP)	0.032866	0.020666	1.590304	0.1726
D(CPSGDP(-1))	0.012713	0.014682	0.865900	0.4261
D(CPSGDP(-2))	-0.022059	0.014447	-1.526956	0.1873

D(LINV)	0.063371	0.348958	0.181601	0.8630
D(LINV(-1))	0.573629	0.328541	1.745988	0.1413
D(LINV(-2))	-0.822032	0.480503	-1.710774	0.1478
ECM(-1)	-0.884256	0.352779	-2.506543	0.0541
R-squared	0.934227	Mean dependent var		0.298159
Adjusted R-squared	0.671135	S.D. dependent var		0.306681
S.E. of regression	0.175871	Akaike info criterion		-0.671401
Sum squared resid	0.154654	Schwarz criterion		0.344754
Log likelihood	29.72821	Hannan-Quinn criter.		-0.378785
F-statistic	3.550946	Durbin-Watson stat		2.235070
Prob(F-statistic)	0.082295			

Source: Researcher's computation, 2015

The results of the over-parameterized market capitalization equation as presented in table 5 showed that the error correction factor is correctly signed and statistically significant as theoretically expected. The coefficient of the error correction factor of 0.88 showed that 88 percent of the deviation from the equilibrium has been corrected each year.

The adjusted R – squared of 0.671 showed that about 67 percent of the total variations in the dependent variable has been explained by variations in the independent variables. The F-statistics value of 3.55 also showed that the overall model is statistically significant at five percent level of significance.

The Durbin-Watson statistics value of 2.24 showed that there is no autocorrelation in the model. Thus, findings from this study can be applied in the Nigerian economy for policy formulation.

Parsimonious error correction results of market capitalization equation

The empirical results of the parsimonious error correction model of market capitalization equation are presented in table 6 below:

TABLE 6: Parsimonious error correction results of market capitalization equation

Dependent Variable: DLMKAP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.084958	0.134970	-0.629454	0.5409
DLMKAP(-1)	0.391019	0.154770	2.526458	0.0266
DLMS	-1.274036	0.556048	-2.291232	0.0408
DLMS(-1)	-2.647744	0.669274	-3.956143	0.0019
DLSAV	0.547034	0.323193	1.692589	0.1163
DLSAV(-1)	1.527321	0.462842	3.299872	0.0063
DLSAV(-2)	1.527950	0.403664	3.785203	0.0026
DLGDP	1.820547	0.302428	6.019765	0.0001
DCPSGDP	0.018153	0.011770	1.542388	0.1489
DCPSGDP(-2)	-0.030005	0.008586	-3.494852	0.0044
DLINV(-1)	0.571028	0.186650	3.059351	0.0099
DLINV(-2)	-0.851331	0.200019	-4.256256	0.0011
DINFL(-1)	-0.003327	0.002050	-1.622757	0.1306
ECM(-1)	-0.639510	0.212350	-3.011579	0.0108

R-squared	0.897473	Mean dependent var		0.298159
Adjusted R-squared	0.786403	S.D. dependent var		0.306681
S.E. of regression	0.141737	Akaike info criterion		-0.765951
Sum squared resid	0.241073	Schwarz criterion		-0.088514
Log likelihood	23.95736	Hannan-Quinn criter.		-0.570873
F-statistic	8.080212	Durbin-Watson stat		2.383915
Prob(F-statistic)	0.000463			

Source: Researcher's Computation, 2015

The parsimonious results as presented in table 6 showed that the error correction variable has the correct negative sign and is statistically significant as theoretically expected. The coefficient of the error correction factor of 0.64 showed that 64 percent of the disequilibrium in market capitalization has been corrected each year. This is a rapid speed of adjustment from short run disequilibrium to long run equilibrium.

The R-squared of 0.897 showed that the estimated short run model has a good fit on the data. In particular, the adjusted R-squared of 0.786 showed that about 79 percent of the total variations in the dependent variable has been explained by the independent variables. The F-statistics value of 8.08 showed that the overall model is statistically significant. This is because the F – statistics value calculated of 8.08 is greater than the critical value of 2.40 at five percent level of significance. This means that the independent variables have joint impact on the dependent variable.

The Durbin-Watson statistics value of 2.38 showed that there is no autocorrelation among the residual terms in the model. This is because, the Durbin-Watson statistics value of 2.38 fell in the critical region representing no autocorrelation. This means that the estimated model is well specified and well behave. This means that findings from this study can be applied in Nigeria for policy formulation.

Analysis of the short run coefficients showed that the previous one period value of market capitalization has positive and significant relationship with the current value of market capitalization in Nigeria. This result is consistent with theoretical, expectation, showing that a 1 percent increase in one period lagged value of market capitalization led to an increase in the current value of market capitalization by 0.39 percent, ceteris paribus.

The results also showed that savings has a positive and significant impact on market capitalization in Nigeria. This result is consistent with the theoretical expectation. This means that 1 percent increases in the current value of savings, previous one period value of savings and previous two periods value of savings, led to increases in the current value of market capitalization by 0.55 percent, 1.53 percent and 1.53 percent, respectively.

Further examination of the results showed that gross domestic product (income) has positive and significant impact on market capitalization in Nigeria in line with theoretical expectation. In absolute terms, the result showed that a 1 percent increase in income led to an increase in market capitalization by 1.82 percent, ceteris paribus. The variable was also statistically significant at five percent level of significance. This is because the t-statistics value calculated of 6.02 is greater than the critical value of 2.131 of five percent level of significance.

Similarly, financial development variable has positive and significant relationship with market capitalization in Nigeria in line with theoretical expectation. This means that an increase in the ratio of credit to private sector to GDP lag two period by 1 percent led to a decrease in market capitalization by 0.03 percent, ceteris paribus. The variable was also statistically significant at 10 percent level of significance. This is so because the t-statistics value calculated of 1.542 is greater than the critical value of 1.341 at 10 percent level of significance.

The results also showed that domestic investment in the previous one year has positive and significant impact on market capitalization in Nigeria. This result is consistent with the theoretical expectation, implying that a 1 percent increase in domestic investment capitalization will lead to an increase in market capitalization by 0.57 percent, ceteris paribus.

As theoretically expected, inflation rate has negative relationship with market capitalization in Nigeria. This result is also in line with theoretical expectation, showing that a 1 percent increase in inflation rate led to a decrease in market capitalization by 0.003 percent, other factors remaining the same.

DISCUSSION OF FINDINGS

The empirical results as obtained in the previous sections revealed that income (i.e. gross domestic product) has positive and significant effect on stock market performance in Nigeria. This is so because an increase in income creates new demand for financial instruments and services, and hence, an increase in stock market performance. Thus, as income increases, its cyclical component tends to have a positive effect on stock market performance.

Also, the results showed that there is positive relationship between savings, domestic investment and the performance of stock market in Nigeria. This is so because as theoretically postulated, stock markets intermediate savings to investment projects. Thus, the larger the volume of savings, the larger the level of investment in stock markets and hence an increase in stock market performance in Nigeria.

Further examination of the results revealed that financial sector performance promotes stock market performance. This is so because financial sector performance affords investors with liquidity by advancing credit and facilitating savings. These intermediating roles of the financial system leads to stock market performance in general.

Lastly, the results showed that inflation rate and money supply have negative relationship with stock market performance. This is so because macroeconomic instability, represented by high inflation rate makes it less incentive for firms and savers to participate in the stock market activities. This is because price change makes it very difficult to assert whether price change were temporary or permanent and markets become more uncertain and prone to attract gamblers. Thus, stock markets in countries with volatile macroeconomic conditions would have volatile price indexes and market capitalization.

SUMMARY OF FINDINGS

The thrust of this study was to examine the macroeconomic factors affecting stock market performance in Nigeria. To achieve this objective, the study employed various statistical and econometric techniques in estimating the relevant equations. From the results obtained, the following summary of findings is made:

There is a positive and significant relationship between savings and stock market performance in Nigeria. This means that savings is a significant factor determining stock market performance in Nigeria.

The results also showed that gross domestic product (income) has positive and significant effect on stock market performance in Nigeria in line with theoretical expectation. This means that income is also a significant factor influencing the performance of stock market in Nigeria.

Further examination of the results showed that financial development has positive and significant effect on stock market performance in Nigeria. This means that the performance of the Nigerian financial sector leads to the development of stock market in Nigeria.

Meanwhile, the results showed that domestic investment has positive and significant effect on stock market performance in Nigeria. This means that investment is a significant determinant of stock market performance in Nigeria.

Lastly, the results showed that inflation rate has negative effect on stock market performance in Nigeria. This means that macroeconomic instability retards the performance of stock market in Nigeria.

CONCLUSION

This study was undertaken to examine the effect of selected macroeconomic variables on the performance of capital market in Nigeria. Stock market performance has been upheld as a catalyst capable of accelerating the rate of economic growth, and development of an economy. This it does by performing effectively its inter-mediatory role of mobilizing savings from surplus sources. By so doing, the level and rate of economic growth and development is enhanced.

However, for stock market to function effectively, so many factors have been identified to have influenced its functioning. These factors ranged from macroeconomic to political and then to institutional. Based on this, the study was carried out to examine factors affecting stock market performance in Nigeria.

From the results obtained, it is found that savings, domestic investment, gross domestic product and financial development have positive and significant impact on market development in Nigeria during the evaluation period. This means that these variables have positive significant influence on stock market performance in Nigeria. On the other hand, the results showed that broad money supply and inflation rate have negative relationship with stock market performance in Nigeria.

Based on the results obtained, the following policy recommendations are made.

i.   The positive effect of savings on stock market performance calls for policy aimed at increasing the level of savings in the banking sub-sector in Nigeria. This can be done by raising savings deposit rate so as to encourage more savings from the people.

ii.   The positive effect of gross domestic product (income) also calls for the implementation of policies that will further raise the level of aggregate output and higher income level in Nigeria. This can be done by supplying infrastructural facilities such as steady power supply, functioning transport, achieved communication system etc. And maintenance of stable macroeconomic and political environment.

iii.   The positive effect of financial development on stock market performance also calls for the implementation of appropriate reforms in the financial sector aimed at promoting its efficiency and performance. Such as E-banking, increased capitalization base and human development effort.

iv.   Meanwhile, the positive effect of domestic investment on stock market performance also calls for policies aimed at increasing domestic investment. This can be achieved by providing basic infrastructures, lowering the cost of doing business, maintaining stable macroeconomic atmosphere in Nigeria.

v.   The negative effect of money supply on stock market performance calls for policies aimed at increasing the level of financial development by increasing and balancing broad money supply in Nigeria.

vi.   Lastly, the negative effect of inflation rate on stock market performance calls for the implementation of inflation control policies. This can be achieved by controlling excessive expansion in money supply so as to stem the tide of inflation in Nigeria.

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