

THE EFFECT OF INFLATION ON STOCK MARKET PERFORMANCE IN NIGERIA, 1980 – 2010

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Abstract

The main thrust of this study was to investigate the relationship between inflation s and the performance of the Nigerian stock market. Two hypotheses were formulated to guide and direct the study. The hypotheses were stated as follows: There is no significant relationship between inflation and market capitalization, there is no significant relationship between inflation and the volume of shares traded on the Nigerian stock market. Relevant data were collected from the Central Bank of Nigeria statistical bulletin. Data collected were analyzed and tested using the ordinary least squares regression technique. Findings resulting from the test revealed that; there existed a direct relationship between all share index and market capitalization (MCAP). The study also showed that there existed a significant and direct relationship between all share index and the value of shares traded on the Nigerian stock market. Given that the stock market operates in a macroeconomic environment, it became necessary that the environment should be an enabling one (regulating inflation rate and other macroeconomic variables) in order to realize its full potentials.

Key words: Stock price volatility, market capitalization, all share index, value of shares traded

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1.0 INTRODUCTION

A major barometer of the general economy of a country is found in the performance of the stock market (Kyerebriah-Coleman and Agire-tettery, 2008). The rise and fall of share prices at the stock market is mostly dependent on the market forces (Chowdhury Molluk and Dakhter, 2006). They aver that if share prices rise or remain stable, it indicates that companies and indeed the general economy also have signs of stability and growth or otherwise. On the other hand, a stock market crash can be a result of economic recession, depression or financial crises (Amadeo, 2007). Therefore, the share price movement and stock index movements indicate the general economic trend of a country.

Stock market performance is dependent on internal and external factors, one of the important internal factors could be a company's performance. If the company continuously increase its revenues, profits and good assets value, people will have confidence in buying its shares (Little, 2007). In so doing, the price indices of that company's shares will rise on the stock exchange. This is indicative of improved stock market performance. If, on the other hand, the company should run at a loss, then its share price will fall and people will start to sell this shares (Schweat, 1989). The stocks of the company in which people are off loading (that is, selling) will cause the price indices of that company to decline on the stock exchange. This is an indication of poor stock market performance, (Lee, 2006).

The external factors may include changes in government policies, recession, depressions, natural calamities (earthquakes, tsunamis, flood, droughts, and wildfire, among others), unprecedented events like the September 11, 2001 disaster, internal country conflicts leading to civil unrest or civil war (Little, 2007). It should be noted that the global stock market had a turbulent time in 2007 owing, especially, to declining consumer's spending and weak corporate performance (Amadeo, 2007).

The United States sub-prime mortgage lending crisis, for example, sparked off credit squeeze and increased the cost of borrowing in many developed economies with not much significant spill-over effect on developing economies (Teresiene, Aarma and Dubauskas, 2008). In Nigeria, however the stock market recorded a significant rise in activity as a result of high lending rates in the money market, improved macroeconomic performance, profit taking and

stock switching by investors (Investorword, 2009). This occurred notwithstanding the interdependency of markets due to Nigeria's economy which is said to be "emerging".

The effect of inflation on stock prices and the performance of the stock market are reflected especially where there is a change in the expected inflation rate. If the earning streams of a company remains unchanged and inflation changes from expected, stock prices will experience a decline, Hence investors who own stocks in such a company will experience negative returns. Thus, this paper intends to assess the effect of inflation on the performance of stock market in Nigeria from 1986 – 2010.

It should be noted that promoting the private sector of any economy is of prime concern of every government. In Nigeria, government policies are to ensure that the private sector has good investment opportunities. This is because the economy of the nation depends on the private sector as it employs more of the working population of the country.

Unfortunately, most investment in the economy are seriously affected by inflation. Inflation makes it extremely difficult for businesses to plan for the future. It is equally very difficult to decide how to produce, because businesses cannot predict accurately the demand for their products at the higher prices they will have to charge in order to cover their costs. High inflation does not only disrupt the operation of a nation's financial institutions and markets but it also discourages their integration with the rest of the world's markets.

Inflation causes uncertainty about future prices, interest rates, and exchange rates, and this in turn increases the risks among potential trade partners, thus discouraging trade. Inflation erodes the value of the depositors savings as well as that of the bank's loans. The uncertainty associated with inflation increases the risk associated with investment and production activity of firms and markets (Udoka, 2008).

In order to accentuate this study, the paper is divided into five sections. Section one is the introduction, section two dwells on literature on stock market performance as enunciated by scholars and experts on stock market development in Nigeria. The third section captures the research methodology. This is closely followed by data analysis and discussion of findings. The remaining section of the paper draws some managerial implications.

Hypotheses:

H0, There is no significant relationship between inflation and volume of shares traded on the Nigerian Stock Market.

H1, There is a significant relationship between inflation and volume of shares traded on the Nigerian Stock Market.

H02: There is no significant relationship between inflation and market capitalization index.

H12: There is a significant relationship between inflation and market capitalization index.

2. LITERATURE REVIEW

Theoretical framework

Stock market exhibits daily, weekly, monthly, quarterly and annual behaviours and also respond to internal and external developments. Though, these market behaviours and trends can be monitored and analysed through the major market averages and indices; which include market capitalization index and the various indices of fund managers. There are three approaches for predicting share price behaviour. These apparently are the Fundamental Theory, the Technical/Chartist, and the Random-walk Theories (Akinsulire, 2006; Corrado et al, 2002; Udoka, 2008 and Oluwe, 1997)

Inflation and its Effect on Stock market

Asogu (1991) was of the view that inflation is generally used to describe a situation of rapid, persistent and unacceptable high rises in general price level in an economy, resulting in general loss of purchasing power of the currency. According to him, inflation causes serious discomfort for consumers, investors, producers and the government. In a study of some countries, Maynard and Van Ryckeghem (1975) as cited in Masha (2003), found that the long-run trend of rising price levels can be attributed to differences in the rates of growth and productivity in the industrial and service sectors. Other causes of rising prices are differences in the prices and elasticity between the two sectors, uniform growth nominal wages in both sectors, and price and wage rigidities. Some attempts have been made to study the character of inflation in Nigeria. Asogu (1991) undertook an empirical investigation based on ten different specifications that covered monetary, structural and open economy aspects of inflation. The variables used include money supply and its lagged values, Real Gross Domestic Product (RGDP) and its lagged values, aggregate domestic credit to the economy and its lagged values, government expenditure and its lagged values. Others are industrial production index, import price index and official exchange rate in all, the models were estimated and the character of

inflation seems to be well captured. In summary, the results of the estimations suggested that real output, especially industrial output, net exports, current money supply, domestic food prices and exchange rate changes were the major determinants of inflation in Nigeria. The study, therefore, confirms the importance of structural character of the economy; open economy and monetary aspects of inflationary trend in Nigeria.

In another study of inflation in Nigeria, Masha (2000) quoted Fakiyesi (1996), who argued that inflation is dependent on growth in broad money, the rate of exchange of the Naira vis-à-vis the dollar, the growth of real income, the level of anticipated inflation, which is based on the previous year's level of inflation. Causes of inflation can however be broadly categorized into the 'fiscal' and 'balance of payment' views. Proponents of the fiscal view have argued that continuous expansion of base money essentially arises from a fiscal disequilibrium. Attempts have been made to show that the economy will be characterized by two inflation equilibria if there is an exogenous real fiscal deficit; a change in Cagan semi-logarithmic money demand function and rational expectations. The high inflation equilibrium will be stable and the low inflation equilibrium unstable (Montel, 1989) as cited in (Afolabi and Efunwoye, 1995).

It is a common belief that inflation is advantageous to common stock. This is majorly because it is argued that inflation increases the returns to shareholders since price of products rise 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 on debt finance failed to reflect the future changes in the price level.

According to Jhingan (1997), when there is inflation, most prices are rising, though some price rise faster than others. Kirkpatrick and Nixon (1986) as cited in Afolabi et al (1995), have shown from their studies that there is a relationship between inflation and rising prices. Asogu (1991) states that inflation rate is expected to vary ceteris paribus, positively in relation to changes in prices. Therefore, in assessing the impact of inflation on performance of stock prices of quoted companies; if there is a relationship, one should expect a positive association between inflation and the variation in stock prices.

Kolari (2001) using stock price and goods price data from six industrial countries showed that long-run Fisher elasticity of stock prices with respect to 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 turns positive over longer horizons. However, Tamtom (2002)

asserted that a negative long-run relationship exist between stock prices and inflation; in turn implying that higher stock prices are associated with lower inflation contrary to recent proposals.

Omran and Pointon (2000) examined the cost of capital in Egypt based on a sample of 109 companies, although their investigation was a cross-sectional study, rather than a time series analysis. Also, their main focus was upon variations across industries. However, they observed that, based upon an international comparison of 41 countries, Egypt has a very high cost of equity exceeded only by Peru, Pakistan and Columbia. They note that Egypt is a fairly new emerging market, despite its very early beginnings, so there may be a high perceived risk, but that even the Treasury bill rate was high, approximately 9% in 1998.

In turn, the treasury bill rate is likely to reflect to some extent the inflation rate, in that investors demand maintaining their purchasing power. The experience of a high cost of capital suggests that inflationary effects may have had an impact on the performance of the individual firms. It is therefore, of intrinsic importance to examine the impact of inflation on the stock market in Egypt. The results have relevance to other markets, such as the recent experience in Turkey.

In theory, there is a case to support the view that since the rate of inflation means an increase in the general level of prices, and since common stocks can be considered as capital goods, then the stock prices should move with the general level of prices. So, when the general inflation rate increases, common stocks should also increase to compensate investors for the decrease in the value of money. In this framework, it is expected that there is a positive relationship between the inflation rate and stock prices. However, early empirical studies demonstrated a negative relationship between the inflation rate and stock returns (Lintner, 1975; Bodie, 1976; Jaffe and Mandelker, 1976).

3. METHODOLOGY

The research design adopted for this study is ex-post facto research design. According to Ayara (2005) Ex-post facto research design is the design that permit the researcher to undertake a research in a situation where he has no control over the independent and dependent variables of the study. At the time of the study their manifestation has already occurred. A need to have a better understanding of this study leads to the consultation of a number of related materials. Most of the required data of this work were obtained from published articles, journals; bulletin especially those from federal office of statistics, articles and news papers publications.

The technique adopted in obtaining information for this study relied heavily on intensive library research. Secondary information such as published journals, texts, paper presentations, reading, newspapers, annual reports and internet materials. Data collection requires the researcher to travel outside Calabar especially to Abuja, Lagos and Ibadan. These data needed in our study are annual estimate of most estimates of most readily available data. We should note here that lot of information are lost in rounding up most data. Therefore, most of the variables to be used in our equations are not sensitive to seasonal changes which annual data might not capture. These data therefore, should not be interpreted as being perfect. The possible implication of the above

Model specification

To carry out this study, two equations were formulated to link the Dependent and independent variables in the study. The equations were thus presented as follows:

$$INFLA = F (VSTNSE) \text{-----} 1$$

$$INFLA = F (MCAP) \text{-----} 2$$

Where

INFLA = Inflation

MCAP= Market capitalization

VSTNSE = value of shares traded on Nigerian stock exchange

Mathematically, the equation will be transformed into

$$INFLA = a_0 + a_1 VSTNSE + U_1 \text{.....} (3)$$

$$INFLA = b_0 + b_2 MCAP + U_2 \text{.....} (4)$$

a priori, $a > 0$, $a_1 > 0$,

$b > 0$, $b_1 > 0$,

4. Data presentation, Analysis and Discussion of Findings

Data presentation

Table 1: Presentation of major variables used for the study

	MCAP	VST	INFLA
1980	4.46	0.52	117.3
1981	4.84	0.33	117.3
1982	4.92	0.22	117.3
1983	5.8	0.4	117.3

1984	5.5	0.25	117.3
1985	6.4	0.31	127.3
1986	7.7	0.49	167.8
1987	8.9	0.29	190.9
1988	9.7	0.25	233.6
1989	12	0.65	325.3
1990	15.9	0.31	513.8
1991	22.6	0.23	783
1992	32.5	0.49	1107.6
1993	46.9	0.66	1543.8
1994	65.5	0.99	2205
1995	171.1	1.84	5092.1
1996	285.6	7.06	6992.1
1997	292	11.07	6440.5
1998	263.3	13.57	5266.7
1999	300	14.08	8111
2000	323	14.7	10963.1
2001	453.4	14.78	12137.7
2002	466.3	15.21	20128.9
2003	563.6	15.34	23844.5
2004	572.8	16.24	24085.8
2005	634.6	16.54	33189.3
2006	5121	16.27	57990.2
2007	13395.6	16.54	31450.8
2008	9563	16.45	20827.3
2009	10233.8	17.21	23879.7
2010			

Source: CBN Statistical Bulletin Vol. 20

MCAP= Market capitalization, VST= Value of shares traded, ASI = All share index

Data analysis

TABLE 2: Regression result of the relationship between inflation and market capitalization (MCAP)

Variables	Coefficients	Std.	t-val	Sig.
		Error		
(Constant)	-1.219	.160	-7.626	.000
INFLAI	.932	.047	19.924	.000

$R^2 = 0.94$
 Adj. $R^2 = 0.93$
 F-statistics = 396.97

DW= 1.001

Dependent Variable: MCAP

The results in Table 2 shows the relationship price changes as measured by all share index and market capitalization. The R^2 value of 94 shows that only about 94% changes in the market capitalization ratio is caused by changes in inflation ratio. This implies that inflation is a good determinant of market capitalization. It therefore means that only about 6 % changes in market capitalization could be caused by other variables not found in the equation but indicated in the error term. The Adjusted R^2 value of 0.93 shows that the model 93 % of goodness fit.

The estimated coefficient of inflation (INFLA) in this equation is positive. Indicating that there exists a direct relationship between all share index and market capitalization ratio. This result is in line with economic a priori condition though the result is statistically significance at both 5 and 10 % level of significance. The result also shows that if all other conditions in this equation are help constant a 1 % increased in INFLA will induces a 93 per cent changes in Market capitalization ratio. .

TABLE 3: Regression result of the relationship between inflation and value of shares traded on Nigerian stock market

		Error		
(Constant)	-16.129	2.126	-7.587	.000
INFLA	-6.966	.622	11.191	.000

$$R^2 = 0.82$$

$$\text{Adj. } R^2 = 0.81$$

$$F\text{-statistics} = 125.24$$

$$DW = 0.27$$

Dependent Variable: VST

R^2 value of . 0.82 shows that about 82% variation in value of shares traded is caused by changes in all share index . Also the adjusted R^2 of .0.81 shows that the model is 81 per cent of goodness fit. The F-value of 125.24 which is significant shows that there exist a significant relationship between inflation and value of shares traded.

The estimated coefficient for inflation is negative in this equation. It there means that there exist a significant relationship between inflation and value of shares traded on Nigeria stock market. This implies that value of shares traded on Nigeria stock exchange will decrease when inflation increases. This result is in line with economic a priori criteria. The result is statistically significant at 5 and 10 per cent level of significant.

Discussion of findings

The finding of this study revealed that there exists a direct relationship between inflation and market capitalization ratio (MCAP). This implies an increase in inflation leads to a decrease in market capitalization ratio and vice versa. This finding is in agreement with Bodie, Kane, & Marcus (1999) who in their finding discovered that there exist an inverse relationship between inflation and market capitalization. This finding is also in order with the finding arrived at by Adeyemi, (1998) who in his study discovered that when inflation increases market capitalization will decrease.

The finding of this study also revealed that there exist a significant and inverse relationship between inflation and value of shares traded on Nigeria stock market. This finding is in agreement with the finding obtained by Akinlo & Ayodele (2000) who in their study discovered that increases in inflation will lead to a corresponding decrease in the value of

shares traded on Nigeria stock market as inflation will influence the prices of stock to fall there by scaring investors to purchase more shares. This finding is also in agreement with the finding obtained by Akinsulire, (2006) who in his study discovered that there exist an inverse relationship between all inflation and value of shares traded on Nigeria stock.

5. Conclusions and recommendations

Based on the findings obtained from this study it could be concluded that: there is a significant and economically substantial positive relationship between all shares index and market capitalization. This correlation emerges essentially independently of the time period considered, the empirical procedure employed, or the set of variables that appear as additional explanatory variables are in various regressions. The study also leads us to the conclusion that an empirical relationship between inflation and value of shares traded on the Nigerian stock market is highly nonlinear, and in particular that the relationship becomes less pronounced at higher rates of inflation.

Recommendations

The findings from this study raised some policy issues and recommendations, which will reinforce the link between changes in price, stock market performance and economic growth in Nigeria.

Given that the stock market operate in a macroeconomic environment, it is therefore necessary that the environment must be an enabling one (regulating inflation rate and other macroeconomic variables) in order to realize its full potentials.

The demand for the services of the stock market is a derived demand. With the existence of a positive relationship between stock market development and economic growth, it is pertinent to recommend that there should be a sustained effort to stimulate productivity in both the public and private sectors.

The determination of stock prices should be deregulated. Market forces should be allowed to operate without any hindrance. Interference in security pricing is inimical to the growth of the market.

The stock market is known as a relatively cheap source of funds when compared to the money market and other sources. The cost of raising funds in the Nigerian capital market is however, regarded to be very high. There should be a review downward, of the cost, so as to enhance its competitiveness and improve the attractiveness as a major source of raising funds.

Considering the benefits being enjoyed by the stock market through the internationalization of its operations, there should be no policy turn around but a sincere pursuit of this policy.

Though the recent legislations on the stock market have been hailed in many quarters as one of the best thing to happen to the stock market in recent times, there are still some gray areas. For instance, the removal of the double taxation effects on the returns of the investors in the stock market must be effected if the market is to develop as envisaged.

Given the present political dispensation, all the tiers of government should be encouraged to fund their realistic developmental programmes through the stock market. This will serve as a leeway to liberate the resources that may be used in other sphere of the economy.

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