

**SOURCES OF STOCK PRICE FLUCTUATIONS IN
CONTEMPORARY NIGERIA AND THEIR
IMPLICATIONS FOR MICROECONOMIC DECISIONS**

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ABSTRACT

Economic theory stipulates that for growth to occur, long term funding is necessary. In developing economies where locally mobilized savings usually fall short of the capital required to bring about economic growth, it becomes necessary to fill the savings-investment gap. This is where the stock market becomes indispensable. Often times, the market fails because stock price and trading volumes are characterized by fluctuations on daily basis. Admittedly, researches on forces driving fluctuations in stock prices have provoked diverse results. This study is therefore conducted to identify country-specific factors driving movements in stock prices in Nigeria. From the result, interest rate, inflation rate and political instability are statistically negligible while exchange rate and money supply are significant drivers of stock price movements in Nigeria. The study recommends liberalization of the financial sector for efficiency of the financial system with only financially viable firms allowed to operate b the Security and Exchange Commission.

Keywords: Financial market, stock prices, trading volumes, fluctuations, sources, Nigeria

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INTRODUCTION

In determining the path of economic growth, several factors are identified. Among these factors, the role of financial markets in the growth process has received significant attention in the growth literature. The development in the financial market will increase the financial aggregate and this will force interest rate down. The fall in interest rate will raise domestic investment, domestic consumption and government expenditure which will translate to the real sector of the economy (Iyoha, 2004). The financial market comprising the money markets (where short-term loans with less than a year's maturity period are being marketed) and the capital markets (long-term transactions with maturity period exceeding a year) channels funds from the surplus units (savings of households, firms, public corporations and even overseas residents) to potential deficit units quickly, cheaply, safely and conveniently thereby influencing the overall economic development of the country (Demirguc-Kunt and Maksimovic, 1996). That is to say, financial markets, ranging from pension funds to stock markets support investment by mobilizing household and foreign savings for investment by firms; ensuring that these funds are allocated to the most productive use, spreading risk and providing liquidity. Notable among the integral parts of the financial market as Chaudhuri and Smiles (2004) put it is the stock market which fosters capital formation in any economy.

In contemporary economies as observed by Kremlin and Vlagaskovic (2010), the stock market significantly affects economic growth in diverse ways. First, it transforms savings into investment. Again, the extent to which the stock market is developed depicts the efficiency of the macroeconomic landscape. That is not all. The stock market is more than a place to trade securities; it provides products which enable economic agents to cope with uncertainties by hedging, pooling, sharing, and pricing risks (Garcia and Liu 1999). Again, it can contribute to macroeconomic stability, shock absorption, and the maintenance of living standards. In countries experiencing uneven development, the stock market can also increase exposure to pervasive financial and economic crises (Long and Zhao, 2009). The aforementioned importance of stock markets to economic growth prompted the colonial government to introduce capital market in Nigeria that led to the establishment of the Lagos Stock Exchange in 1960 and renamed the Nigerian Stock Exchange in 1977 with nine trading floors in Lagos, Benin, Kano and Ibadan amongst others (CBN, 2007). With the deregulation in 1993, the market improved both in the

number of equities listed, volume, value and range of securities available for trading. Patronage of the market soared, recently boosted by banks that rushed to the stock market to shore up their capital base in line with the recent banking reform. In 2000, the Nigerian Stock Exchange commenced operation on its Trade Alert, Trade Guarantee Fund Scheme (aimed at arresting the risk of failed trade that may arise from the inability of stockbrokers to cover their purchase) and its e-Business Platform/internet portal which aimed at improving the efficiency of the Nigerian capital market and encouraging greater foreign capital inflow into the economy (CBN, 2007). These developments according to Afees and Kazeem (2010) have enhanced market liquidity, offered opportunities for price discovery and improved market efficiency in service delivery.

However, despite the growth of the stock market in Nigeria, not only that it is still very small relative to the size of the economy with the level of development remaining low, today, stock price all over the world is characterized with upward and downward movements (UNDP, 2008). Nigeria is not excluded. Trading volumes (number of shares) in the stock market constantly fluctuated strongly as stock prices change in stock markets on a daily basis. In Nigeria just like many other countries of the world, sources of fluctuations in stock prices have provoked diverse results. The known efficient market theory (where security prices fully and speedily reflect available information) which centers on issues of availability and cost of information believe that stock prices reflect everything that is known about a company and hence can be predicted based on fundamental technical or professional analysis (Kremlin and Vlagaskovic, 2010). The theory especially holds true when the company's 'real' financial position is reflected in its share price. Thus, if new information is revealed about a firm, it will be incorporated into the price of the share immediately thereby causing price to change. In lieu of the above, the study of the determinants of Nigerian stock prices is therefore important to identify country-specific factors influencing the movements of stock price.

THEORETICAL BASIS OF THE DETERMINANT OF STOCK PRICES

Literature indicates that the performance of a company, a change in board of directors, appointment of new management, and the creation of new assets, dividends, earnings, etc. are the fundamental factors influencing stock prices. This analysis, treated in the efficient market theory, posits that the most direct influence on a stock's price is a change in the fundamentals of the

business. Accordingly, if revenues and profits are continuously increasing, one can expect the share price to rise as investors bid to buy into the increasing fortunes of the company. On the other hand, if the profit is flat or, worse, declining with no change in sight, investors begin to abandon the stock and the price will fall. The theory however argues that changes in the underlying business have a direct impact on the share price. Smart investors spot a subtle change before they move prices and take appropriate action. Another factor which the theory identifies is sector changes which maintain that changes in the stock's sector can have positive or negative effects on its price (Maysami and Koh, 2000).

Mukherjee and Naka (1995) argue that market forces such as demand for and supply of stock affect stock price movements. Any change in demand and supply, both of which can change at different rates causes fluctuation in share prices. If demand for a stock rises, its price tends to rise. An increase in supply depresses the stock price. Demand and supply are however related to other factors. Investment returns and company profitability are other potential factors. These factors are however dependent on profitability as no company pays good investment returns (dividends/bonus) to its share holders without a solid profitability report. However no company is by law compelled to declare dividends. It is only when such company makes profit that it can declare dividend and or bonus issues. An impressive investment returns will attract more investors to the company, if returns on investment are attractive, there will be high demand for its stock and the price moves up. The reverse is the case when a company's investment returns is unattractive. Ordinarily, if a company is performing well in the area of profitability, investors will be interested to invest in such company and this will influence the share price of the company. On the other hand, a poor profitability will not attract investors as they will not like to put their monies at risk. In essence, impressive profitability of a company leads to increase in demand of the company's share and subsequently increase in its share price (See, for example, Long and Zhao, 2007).

On the other, external factors such as government rules and regulations, inflation, exchange rate, money supply, gross domestic product and other economic conditions such as investors' behavior, market conditions, competition, natural or environmental circumstances directly affecting the production of the company, behavior of market participants, strikes, etc, could be important influencing factors determining stock price movements. Inflation and interest rate are

key external factor identified as determinants of stock prices. Maysami and Koh (2000) using cash flow valuation model maintains that an increase in expected inflation rate is likely to lead to economic tightening policies that would have negative effect on stock prices. A rise in the rate of inflation increases the nominal risk-free rate and raises the discount rate. That is to say, if the inflation rate is high, the tendency is that as the real income declines, the investor ends up selling their assets, including stocks to enhance their purchasing power. The reverse is the case when the inflation rate is low, investors would like to acquire more assets with stocks not exclusive. In essence, the era of high inflation rate negatively affects stock prices while low inflation rate boost stock prices.

The analysis above conforms to the work of Garcia and Liu (1999) that inflation exerts a significant negative influence on stock prices. Moreover, stock prices are also strongly driven by the level of economic activity measured by GDP, interest rate, money stock, and financial deregulation (Ologunde, Elumilade and Asaolu, 2006). Apparently, a rise in interest rate may encourage investors to switch from the stock market to the money market. Reduced interest rate encourages demand for cash for speculative purpose and therefore may boost stock market activities. There is a relationship between bond yield, the level of stock prices and the price earnings ratio. The lower the yield on debt instruments, the higher the stock prices as well as the price earnings ratio. On the other hand the higher the yield on bonds, the lower the stock prices (Demirguc-Kunt and Maksimovic, 1996).

Exchange rate is another factor pointed out in the literature as one key determinant of stock prices movements. Kremlin and Vlagaskovic (2010) argue that the instability of exchange rate can cause speculation in foreign exchange market and exerts upward pressure on operating cost and lowers corporate profit in the real sector: The higher the operating cost the lower the profit. When the value of the currency is dropping, the incentive to invest by foreign investors in the domestic economy is lost. This affects stock market prices. Additionally, money supply and country GDP are also seen as potential determinants of stock prices movements (Chaudhuri and Smiles, 2004). Contraction in money stock negatively impacts on stock prices, while an upward movement in GDP raises stock prices due to the potentials for higher profits arising from a healthy business climate and vice-versa.

MATERIALS AND METHODS

This study employed the single linear regression model using the ordinary least squares (OLS) estimation technique. A-priori, a number of determinants has been identified. Guided by the research objectives, we formulate the compact functional form of our model as:

$$SPR = F (EXC, PIS, INT, MS, INF) \dots\dots\dots(1)$$

Where: *SPR* = Stock price in Nigeria

EXCR = Exchange Rate

MS = Money Supply

INT = Interest Rate

INF = Inflation Rate

PIS = Political Instability

Note, Turnover ratio which is equal to total value of total shares traded divided by market capitalization is used as a proxy for stock prices. This is so because the price of the shares determines how much an individual investor can spend on shares. The amount an individual invest also determine the rate of turnover. Also Political instability was used as proxy for capturing civil unrest. Transforming the equation above into its linear form, we have:

$$SPR = \beta_0 + \beta_1 EXC + \beta_2 PIS + \beta_3 MS + \beta_4 INT + \beta_5 INF + U_t \dots\dots (2)$$

Most time series data tend to contain infinite variances that are not mean-reverting and lie on the unit circle. When this arises, equations estimated from such series usually result in spurious regression that makes little or no economic sense. In fact, the loading of the endogenous variable is minuscule when a long-run relationship exists between it and the economic fundamentals driving it. Thus, empirical economists have observed that results emanating from empirical models are likely to be “spurious” if the variables that enter the model are non-stationary and co-integrated (Iyoha and Ekanem, 2002). Consequently, unit roots will be conducted using the Augmented Dickey Fuller test while the Engle- Granger procedure will be applied to check for the co integration status of the variables in order to avoid the “nonsense correlation” that may arise thereupon. If however, there is co integration among the variables the model in equation (2) will no longer be applicable and the error correction mechanism will be introduced thus:

$$\Delta SPR_{gi} = \beta_0 + \beta_1 \Delta EXC_1 + \dots\dots + \beta_5 \Delta INF_5 + \beta_t \mu_{t-1} + \mu_t \dots\dots\dots(3)$$

where;

Δ = First-difference Operator

$\beta_t \mu_{t-1}$ = Mechanism restoring the variables to their long run equilibrium

β_1 = Coefficient measuring the degree of error corrected.

THE DATA

The data for this study are secondary in nature and were sourced from the CBN Statistical Bulletin and Statement of Account, various years and NSE Fact Book various years. The variables for the study were sampled from 1980-2011 and were analyzed via OLS using the PC-Give 8.00 Econometric Package.

RESULTS AND DISCUSSION

Since results emanating from empirical models are likely to be spurious if the variables are non-stationary and co-integrated, to avoid the nonsense correlation of result that is likely to arise therein, necessary tests were completed prior to estimation. Following the ADF, unit roots test was run on the levels of the variables and on their 1st, 2nd and 3rd differences. The result shows that all the variables were stationary after first differencing. Given the unit roots property of the variables, we proceeded to implement the Engle-Granger co-integration procedure by estimating the linear combination of all the explanatory variables against the dependent variable at their levels forms without their intercept and then tested their residual for unit root. The result is displayed in the table below:

Table 4.1 Result of Co-integration Tests for the Residuals

	t-adf	Lag	Critical value
Residual 1	-1.3599	2	-1.952
Residual 2	-1.0565	1	“
Residual 3	-1.6093	0	“

From the table above, all the residual t-adf fall short of the critical value at the 5% level of significance. Since the existence of a long run relationship could not be established, an Error Correction Model is thus not required. We proceeded to run our model using OLS

Results Summary

VARIABLE	COEFFICIENT	STD ERROR	T-VAL
CONSTANT	193.70	59.694	3.245
INT	0.0535	0.6750	0.079
PIS	-3.8979	14.252	-0.273
EXC	-0.74489	0.2801	-2.659
INF	-0.15572	0.6515	-0.239
LMS	13.800	6.1911	2.229

$$R^2 = 0.6780, F(5, 21) = 6.8202, DW = 1.67$$

From the result, R^2 value is approximately 0.68 implying that about 68% of the total variation of the behavior of stock price movement captured by turnover ratio has been explained by the set of independent variables included in the model. The F-statistic exceeds its critical value at the 5% level of significance. However, the Durbin–Watson value of 1.67 shows the presence of negative auto correlation. From the result, although there exists a positive relationship between interest rate and turnover ratio which conforms to a-priori expectation, the result indicates that real interest rate is not statistically significant using the rule of thumb. This result implies that real interest rate is not a major determinant of stock price movement in Nigeria. The dummy capturing political instability also conforms to apriori expectation, it is also not statistically significant. As expected, inflation displays a negative coefficient indicating an inverse relationship with the turnover which implies that inflation reduces income hence discourages investment, it is not statistically different from zero.

Interestingly, money supply is statistically significant. The positive sign meets a-priori expectation. It shows how frequent changes in the variable prompt changes in turnover ratio. From the result, a percentage increase in money supply leads to 138% increase in turnover ratio. Thus, money supply is a major determinant of stock price movements in Nigeria. Coincidentally exchange rate is also statistically significant. It possesses a negative coefficient of -0.75 implying that a percentage increase in the variable leads to 75% increases in turnover ratio. The negative coefficient displayed could be attributed to the instability in the foreign exchange market which can lead to crisis of confidence that could cause capital flight or a large-scale withdrawal of short-term credit facilities. Since high exchange rate discourages stock market investment, it will cause

operating cost to move upward and lowers corporate profit in the real sector: The higher the operating cost the lower the profit and the lower the price of stock. These results have robust implications for policy.

CONCLUSION

Economic theory stipulates that for growth to occur in any economy, long term funding is indispensable. In less developed economies where locally mobilized savings usually fall short of the capital required to bring about the needed growth, it becomes necessary to fill the savings - investment gap by encouraging foreign capital inflows. This is where the stock market becomes a sine-qua-non. However, stock price all over the world including Nigeria is characterized with fluctuation. Trading volumes and stock prices constantly fluctuated on daily basis. This study therefore examines the sources of fluctuation in stock prices in Nigeria. In so doing, literature relating to the phenomenon was reviewed and the Linear Regression Model was adopted using Nigerian data. To avoid spuriousity of the result, time series properties of non-stationary data were conducted and the Engle-Granger result reveals the absence of co-integration. The result displays an astounding revelation. Not only that interest rate is not statistically different from zero, inflation rate possesses a negative value implying an inverse relationship with economic growth. Interestingly, the result elicits quantitative evidence which shows that exchange rate and the level of money stock in the country are the major determinants of stock price movements in Nigeria. Based on the results, we make the following policy suggestions. First, the financial sector should be liberalized as a condition for the efficient functioning of the financial system. Next, the activities of the Nigeria stock exchange should be made more transparent to bring more confidence to investors. Again, the Nigerian Security and Exchange Commission should ensure that only firms with good financial standing are allowed to appear in the stock market. Finally, the government should encourage Nigerians to take advantage of the stock market and save for investment growth and capital formation in Nigeria.

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