DETERMINANTS OF SHARE PRICE MOVEMENT IN NIGERIA -THE MANAGEMENT PERSPECTIVE

Hassan, Olanrewaju Makinde

1Department of Business Administration, Faculty of Management Sciences, Kogi State University, Anyigba, Kogi State, Nigeria

ABSTRACT

The study is motivated by the desire to investigate the determinants of share price movement given its fluctuation and oscillation over time. The study made use of secondary data sourced from the Central bank of Nigeria (CBN) and the National Bureau of Statistics (NBS) for period between 1991 and 2013. Using an appropriate analytical tool such as the ordinary least square (OLS) research technique; our study revealed that none of the selected factors have impacted positively on foreign portfolio investment in Nigeria except for market capitalization that was positive and statistically significant as well. Therefore, the study recommended that the on-going reform in the Nigerian capital market be sustained, especially in the area of investors’ protection and confidence, infrastructural development, and accounting disclosure requirements.

Keywords: Determinants, Reforms, Share price, Accounting disclosure, Nigeria, Capital market, Foreign portfolio investment, Market capitalization, Investors’ confidence, Infrastructural development.

Contribution/ Originality

This study has contributed to the existing literatures that stated inflation as a good determinant of share price movement from another perspective that shows and empirically proved that the exchange rate is a more viable determinant of the movement of share prices.
1. INTRODUCTION

It is no gainsaying the fact that one of the most liquid forms of investment in modern investment practice is that which is done in equity share, considering its yield in terms of returns without necessarily requiring the physical labour or managerial skills of the investor. However, investment in shares is not one of the easiest decisions to make. This decision is primarily affected by the market price of the share. Likewise, market price drawing from theoretical propositions depends on a number of other factors. Some of these include dividend per share, payout ratio, earning per share, management, size of the firm, diversification and dividend yield. When making predictions for share prices, there are several approaches that can be employed. For example, fundamental approach which emphasizes that share price can be predicted on the basis of managerial, environmental and financial factors or a technical approach which considers the use of past trends in predicting future share price as most appropriate.

Understanding of the effect of various fundamental variables on share price is very much helpful to various parties such as investors, management, government. Since it will offer suitable guidance when vital investment decisions are made. In developed countries many studies have been undertaken to study the determinants of the share price, but in Nigeria there are few studies which have been conducted on this issue. The present study attempts to investigate the determinants of share price movements in Nigeria.

1.1. The Problem of Study

Given the prominence of the quest and desire for financial freedom in our present time, the factors that drive the oscillation of share prices has become a salient matter of discuss amongst researchers and professionals that deal in portfolio investments. In this regard, two opposing views have developed; while some have given it a micro view, others have viewed it from the macro level. Incidentally, few studies in Nigeria have attempted to provide empirical evidence of the determinants of stock price movements (for instance Udegbunam and Eriki, 2001) while few others have done that at theoretical level.

The study by Udegbunam and Eriki (2001) is lagging behind with regard to the recent global financial crisis and only provides a theoretical exposition that lacks quantitative empirical evidence. In the same vein, studies carried out on different countries on factors responsible for the up and down swing of share prices reveal conflicting outcome of results. As such, it becomes difficult to generalise this outcome, even though some of the factors identified cut across most countries stock markets. Since each stock market has its own modus operandi, it becomes difficult to make a generalisation. Each market has its own rules and regulations, country’s peculiarities, type of investors, and other factors that provide the basis of its uniqueness.

1.2. Study Focus in Question form

What are the determinants of share price movement in Nigeria?
1.3. Focus/Emphasis of the Study

The main focus or emphasis of this study is to investigate the determinants of share price movement in Nigeria.

1.4. Hypotheses Testing

The Null Hypothesis (Ho): There is no significant relationship between share price movement and its determinants in Nigeria.

2. LITERATURE REVIEW

According to Afolabi and Dada (2014) the price of a stock move up or down depending on the supply and demand for the stock at any point in time. The supply and demand represents the quantity of the shares with investors and ready to buy or sell at a point in time. As the case in the elementary theory of demand and supply, where the number of buyers of stocks are more than that of sellers of a stock, the price goes up. The reverse holds when sellers outnumber buyers. The quantity demanded or supplied of a stock is determined by internal and external factor of the company. Afolabi and Dada (2014) posited that in the long run, returns on investment in shares are rarely matched by other investment alternatives. Share prices rise and fall on an ongoing basis and investors can lose or make money depending on when they sell and buy. It is therefore necessary for the investor to know why movement in stock prices occurs in order to make optimum investment decisions.

2.1. Empirical Findings

Zahir and Khanna (1982) investigated the determinants of stock prices of 101 industries in India for the year 1976-77 and 1977-78 by employing multiple linear regression models. They found dividend per share and yield emerged as a significant determinant of share price. Also, the coefficient of book value was positive throughout and highly significant except 1977-78. In the same study, it was revealed that the influence of earning-price multiplier on share prices appeared to be very weak. Balakrishnan (1984) in his own study examined the impact of selected variables on the share prices of two companies; general engineering and cotton textile industries in India, he sought to analyse the impact of dividend per share, earning per share, book value and yield on share price of general engineering and cotton textile industries in India. He observed that the book value per share and dividend per share turned out to be the most significant determinants of market price in both the industries. In addition, Yield was also found to be a significant determinant in cotton textile industry though with a negative sign.

Srivastava (1984) examined cross-section study of 327 companies and concluded that high dividend rates are associated with higher market prices of securities in India. Tsoukalas and Sil (1999) investigated the impact of dividend/price ratio and dividend growth on the share prices movements of UK stock market from January 1995 to December 1996. They found that divid
end/price ratio predicts real stock returns for the UK stock market, and that there was a strong relationship between real stock returns and dividend yields. Malhotra and Prakash (2001) examined the market price determinants of ‘A’ group and ‘B’ group shares of Indian stock market during 1989-90 to 1998-99, using correlation analysis and regression analysis. The study concluded that the price behaviour of ‘B’ group share is determined mainly by book value per share, earning per share, dividend per share, P/E ratio and market price to book value ratio. Malhotra and Prakash (2001) examined the market price determinants of ‘A’ group and ‘B’ group shares of Indian stock market during 1989-90 to 1998-99, using correlation analysis and regression analysis. The study concluded that the price behaviour of ‘B’ group share is determined mainly by book value per share, earning per share, dividend per share, P/E ratio and market price to book value ratio.

Irfan and Nishat (2002) attempted to explain the price changes due to the six fundamental variables (dividend yield, payout ratio, size of the firm, leverage, earnings volatility and asset growth) during the period 1981-2000 in Pakistan. They have used simple regression model to observe the price changes. The empirical findings revealed that that prime key fundamental factors had no significant influence on the share price deviation in Pakistan.

Besides, Sen and Ray (2003) examined the key determinants of stock price in India. They based their study on the stocks compromising the BSE index over a period between 1988-2000. Study showed that dividend payout was an important factor affecting stock prices. Furthermore, in their study, they found out that earning per share has a very weak impact on the share prices. Hartono (2004) examined the impact of dividend and earnings on stock prices and found significant positive impact on equity prices if positive earnings information occurs after negative dividend information. Also, a significantly negative impact occurs in equity pricing if positive dividend information is followed by negative earning information. Al-Deehani (2005) examined the determinants of share price for companies listed on the Kuwait stock exchange. Results of the study also revealed that the variables of previous earnings per share, cash dividends per share, previous cash dividends per share, return on equity, price to book value ratio, previous cash flow per share and cash flow per share are all highly correlated with the share price. Docking and Koch (2005) found direct relationship between dividend announcement and equity price behaviour. In the study of Sharma and Singh (2006) when they used data from 160 Indian firms between 2001 and 2005, they observed that earnings per share, price-earnings ratio, dividend per share, dividend coverage, dividend payout, book value per share, and firm size are the determinants of share prices.

Somoye et al. (2009) examined the factors influencing equity prices in the Nigerian stock market for the period 2005-2007. They employed simple linear regression model to examine the impact of earning per share, GDP, interest rate, dividend per share and oil price on equity price. The empirical results showed the variable dividend per share, earning per share and GDP exerts a positive correlation to stock prices but are not significant determinants of share price. AL- Shubiri (2010) investigated the determinants of market stock price movements of Jordanian commercial bank. The study includes the commercial bank of Amman stock exchange for the period 2005-2008. The study used simple and multiple regression analysis to investigate the determinants of market stock price. The empirical findings show highly positive significant
relationship between market price of stock and net asset value per share, market price of stock dividend percentage, GDP and negative significant relationship on inflation and lending interest.

Nirmala et al. (2011) identified the determinants of share prices in the Indian stock market. They concentrated their study on three different sectors; auto, health care & public sector undertakings over the period 2000-2009. They employed panel co-integration test and fully modified least squares to examine the effect of dividend, profitability, price earnings ratio and leverage on share prices. The empirical findings showed that dividend per share and price earnings ratio are influenced positively to share price of all three sectors. The results further indicated that debt equity ratio is a significant factor influencing share prices for all the three sectors and that it exerts a negative relation with share price.

According to the study by Udegbnunam and Eriki (2001) the stock market has become an essential market playing a vital role in economic prosperity by fostering capital formation and sustaining economic growth in most economies across the world. They stated further that stock markets are more than a place to trade securities; they can also operate as facilitator between savers and users of capital by means of pooling of funds, sharing risk, and transferring wealth. In addition, economic growth can be made possible through the stock market because the Stock markets help to channel funds to investment avenues that are considered to be most beneficial and proficient. Guglielmo et al. (2004) while speaking on the benefits of stock markets argue that the primary benefits of a stock market is that it constitutes a liquid trading and price determining mechanism for a diverse range of financial instruments. According to them, it allows risk spreading by capital raisers and investors and matching of the maturity preferences of capital raisers (generally long-term) and investors (short-term). It will in turn stimulates investment and lowers the cost of capital, thereby contributing to the economic growth of a nation in the long term.

The fact that stock prices in almost all of the nations of the world Nigeria inclusive is known for its fluctuating nature. 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, as the case with many other countries of the world, the issue of what determines stock price movements have proved to produce differing answers depending on the prevailing economic situation in those countries.

### 2.2. Share Price Movement and Monetary Variables

In a study by Malaolu et al. (2013) on the determinants of stock price movements in Nigeria: evidence from monetary variables, they observed that apart from specific company characteristics, there are other external factors such as government rules and regulations, inflation, exchange rate, money supply, growth in gross domestic product and other economic conditions, investor behaviour, market conditions, competition, uncontrolled natural or environmental circumstances directly affecting the production of the company, behaviour of market participants, strikes, and so on, could be very important influencing factors in determining stock price movements.
Studies have also revealed that inflation and interest rates have been identified as key external factors that are responsible for the upward and downward swing of share prices. For example, Maysami and Koh (2000) observed that an increase in expected inflation rate will expectedly bring about economic shrinking policies that would sure have adverse effect on share prices. They made use of cash flow valuation model to validate their claim. In a way, discount rate would be raised due to the rise in the rate of inflation and it will also increase the nominal risk free rate. Defina (1991) however holds contrary opinion by positing that rate at which inflation rises does not correspond with the rate at which the cash flows rises. A report by dynamic portfolio limited shows that if the inflation rate is high, the tendency is that as the real income declines, the investors end up selling their assets, including stocks to enhance their purchasing power. In the meantime, investors desire to acquire more assets when the inflation rate is low since prices of goods and services will be lowered at this time. It is interesting then to want to conclude that during the period of high inflation rate share prices are affected negatively while price falls boost share prices.

On the effect of monetary policy variables on stock price moments, Udegbunam and Eriki (2001) examination of the relation between stock prices and inflation in the Nigerian stock market provides a strong support for the proposition that inflation exerts a significant negative influence on the behaviour of the stock prices. Additionally , the study shows that the level of economic activity as measured by GDP, money supply, rate of interest and financial deregulation can strongly determine share prices. However, contrariwise, the outcome of the study shows that there was no significant effect of oil price volatility on share prices.

According to Malaolu et al. (2013) a rise in interest rate may encourage investors to switch from the stock market to the money market. On the contrary, speculative purposes for cash demand are greatly encouraged which in turn boost stock market patronage when there is a reduction in interest rate. Ologunde et al. (2006) in their study revealed that the prevailing interest rate exerts positive influence on stock market capitalization. They used an ordinary regression analysis to study the relationship between the rate of interest and the stock market capitalization.

Exchange rate is also found to be another strong determinant of share price movements. According to Adam and Tweneboah (2008) that speculation in the foreign exchange market, disruption in the international credit operations and international stock market operations can all stem from instability of exchange rate. In addition, crisis of confidence that could cause capital flight, or a large-scale withdrawal of short-term credit facilities can also result from the instability of exchange rate. It is such that if there is high exchange rate it would encourage round tripping and discourage stock market investment. This will cause operating cost to go upward, thereby lowering corporate profit in the real sector. The higher the operating cost the lower the profit. Somehow, the incentive to invest by foreign investors in the domestic economy is lost, when the value of the currency is falling consistently and without control this intuitively affects share prices and the stock market as a whole. Furthermore, the volume of money supplied into an economy and the country’s Gross Domestic Product (GDP) were also considered and viewed as determining factors of share
price fluctuations. Contraction in money stock is expected to have a negative impact on stock prices, while an upward movement in GDP could raise stock prices due to the potential for higher profits arising from a healthy business climate. On the contrary, share prices drops when there is a fall in the Gross Domestic Product (GDP).

2.3. Theoretical Framework

Rational Expectation Theory (RET) propositions, emphasize future expectation. The theory put forward that investors purchase stocks depending on their knowledge of what the prices of stocks will be in the future. Rational Expectation theory, according to its proponents, serves as a building block for the ‘random walk’ or efficient markets’ theory of securities prices. A careful study or observation of a sequence of daily stock price reveals that it tends to follow a random walk, especially when the current value gives the best possible prediction of future values. Furthermore, another theory of stock prices called the Efficient Markets theory of stock prices uses the concept of rational expectations to draw conclusions that investors buy stocks they expect to have a higher-than-average return and sell those they expect to have lower returns.

Somehow, they tend to push up the prices of stocks which is expected to have higher-than-average returns and drive down the prices of those expected to have lower-than-average returns. The prices of the stock begin to adjust until the expected returns, adjusted for risk are equal for all stocks. By equalization of expected returns, it implies that investors’ forecasts or projections become built into or reflected in the prices of stocks. More precisely, it means that stock prices change so that after an adjustment to reflect information like dividends, bonuses, the time value of money, and differential risks, they equal the market’s best forecast of the future price. Therefore, the only factors that can change stock price are random factors that could not be known in advance (Sergeant and Wallace, 1975).

The Efficient Market Hypothesis posits that the most direct influence on a stock’s price is a change in the fundamentals of the business. It is such that when revenues and profits are rising, it is expected that there would be a rise in share price. This rise according to the Efficient Market Hypothesis is as a result of investors bid to buy into the increasing fortunes of the company. Contrariwise however, investors begin to let go off stocks, if profit is flat or declining with no change in sight and as a result there will be a decline in the stock price. Part of the propositions of this theory is that share prices are usually impacted upon by changes in the underlying business. As a result, investors that are quick, sharp and visionary in their thought would have foreseen a change even before prices are affected and would take corrective measures as deemed appropriate.

Another factor which the theory identified is what is referred to as sector changes; the theory maintains that changes in the stock’s sector can have positive or negative effects on its price. Mukherjee and Naka (1995) and Maysami and Koh (2000) posits that cyclical nature of some sectors or industries should be expected to have effect on share prices as well. Mukherjee and Naka (1995) stated further that forces of demand and supply also known as market forces can affect the
movement of stock price. It is such that at any level where there is change in demand and supply; it would in turn cause fluctuation in share prices. For example the share price of stock rises when the demand for such stock rises. Whereas, share price falls whenever there is an increase in supply of stock.

Another factor identified as Investment returns or company profitability is also one of the determinants of share price movements. This factor is, however dependent on profitability as there is no company that can pay good investment returns in terms of dividends and/or bonus issues to its shareholders without a solid profitability report. In the meantime, most company only declare dividends when they profit, this could be misleading since there is no compulsion on any firm by law to declare their dividends. As such, when they do not profit they will not see need to declare dividends. It is only when such company makes profit that it can declare dividend and/or bonus issues. Obviously, it is expected more investors will be naturally attracted to a company with very sumptuous investment yields. As a result, there will be high demand for its stock and the price moves up when the returns on investment are attractive. The contrary occurs when a company’s investment return is unattractive. On the other hand, a poor profitability will not attract investors as they will not like to put their money at risk. In essence, impressive profitability of a company leads to increase in demand of the company’s shares and subsequently increase in its share price.

3. METHODOLOGY OF THE STUDY

3.1. Model Specification

In specifying the model, we put into considerations the need to allow for empirical comparison and for the harmonization of the degree of differentiation in data form. As such, this study uses the Log form of the data in which the dependent variable is the annual time series data of share prices in Nigeria (SPN) while the independent variables are the Exchange rate of the naira (EXR), interest rate (IR), Money Supply (MSS) and Inflation rate (INFR) from 1991-2013. It deviated from previous studies, like (Nathan and Mark, 2005) in which the vector error correction model was employed and Afolabi and Dada (2014) in which over-parameterized and the parsimonious error correction model was used.

Therefore, we specify our model in the form:

\[ SP = f(EXR_1, INR_2, MSS_3, INFR_4) \]

\[ SP = bo + b_1EXR_1 + b_2INR_2 + b_3MSS_3 + b_4INFR_4 + U \]

Represented in its Log form we have;

\[ \log SP = \log bo + b_1\log EXR_1 + b_2\log INR_2 + b_3\log MSS_3 + b_4\log INFR_4 + U \]

Where;

- \( SP = \) Share Prices in Nigeria (SPN)
- \( EXR_1 = \) Exchange Rate (EXR)
- \( INR_2 = \) Interest Rate (IR)
- \( MSS_3 = \) Money Supply(MSS)
\[ \text{INFR}_t = \text{Inflation Rate (INFR)} \]

\[ U = \text{the stochastic variable or the error term and } b_1, b_2, b_3 \text{ and } b_4 \text{ are the coefficients of the parameter estimates of the variables } b_1, b_2, b_3, \text{ and } b_4 \text{ respectively, and } b_o \text{ the intercept of the Model.} \]

As such, the study used the ordinary least square multiple regression technique to estimate the values of the parameters \( b_0, b_1, b_2, b_3 \text{ and } b_4 \). Additionally, the student’s t-test and the standard error test is used to test the statistical significance of the parameter estimates respectively, and the test of goodness of fit for the model using the \( R^2 \) and adjusted \( R^2 \) techniques. This will enable us to know the percentage of variations between the dependent variable and the explanatory variables.

Finally, the F-statistic test is used to determine the overall significance of the multiple regression model and the Durbin –Watson test for the presence or absence of autocorrelation.

### 3.2. Techniques Used for Estimation and Sources of Data

In the estimation of the specified model, the ordinary least square (OLS) multiple regression technique was employed. The estimation will be carried out with the use of an econometric package known as ‘E-Views’. In order to facilitate time series analysis, data on, Share Prices in Nigeria, Exchange rate, interest rate, Money supply and Inflation rate were collected from the following sources: Central Bank Nigeria (CBN) – Statistical Bulletin, Nigerian Stock Exchange Fact Book Various Years and National Bureau of Statistics (NBS).

### 3.3. A Priori Expectations

On a priori ground, it is expected that rising Share Prices should be accompanied by a fall in exchange rate, i.e. an inverse relationship exists between rising share prices and exchange rate. Also, Interest rate should have a negative relationship with the share prices because a rise in share prices will cause a fall in interest rate since it is not the best of time to invest. However, a rise in share prices is expected to be accompanied by a rise in money supply and inflation rate, i.e. both have positive relationship with share price index in Nigeria.

### 4. RESULT PRESENTATIONS

Using the annual time series data of the entire variables so chosen, we have our estimated model result to be:

<table>
<thead>
<tr>
<th></th>
<th>SP</th>
<th>Intercept</th>
<th>EXR</th>
<th>INTR</th>
<th>MSS</th>
<th>INF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>4.04</td>
<td>+ 0.2 B_1</td>
<td>-1.83B_2</td>
<td>+ 0.72B_3</td>
<td>+ 0.07B_4</td>
<td></td>
</tr>
<tr>
<td>Standard error</td>
<td>2.56</td>
<td>0.26</td>
<td>0.57</td>
<td>0.16</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td>t-statistics</td>
<td>1.57</td>
<td>0.62</td>
<td>-3.20</td>
<td>4.51</td>
<td>0.43</td>
<td></td>
</tr>
</tbody>
</table>

\( R^2 = 93\% \quad F\text{-stat}= 59.47 \text{ (Prob. 0.0)} \quad D.W. = 1.6 \)

### 4.1. Results Interpretation

#### 4.1.1. On a priori grounds or economic relationships

All of the explanatory variables’ parameter estimates possess the expected signs except the
sign of the exchange. That is, interest rate conform to a priori been negatively signed while money supply and inflation rate also conform to a priori expectation since they are both positively signed. Implying that interest rate has an inverse relationship with share prices and both money supply and inflation rate have a positive relationship with share prices in the Nigerian economy. However, the naira exchange rate had a positive relationship instead of a negative relationship with share price in Nigeria.

4.1.2. On Statistical Criterion

i. Based on the coefficient values, a unit change in SHN is caused by 0.16 rise in the naira exchange rate, 1.83 fall in interest rate, 0.72 rise in money supply and 0.07 rise in inflation rate. With the computed t-statistics and using the rule of thumb of 2, it is evident that two of the t-values for the parameter estimates of the variables were statistically significant i.e. interest rate and money supply while the naira exchange rate and inflation rate were not statistically significant.

ii. The value of the $R^2 = 0.93$, shows that there is very strong relationship between the dependent variable and the independent or explanatory variables. The model has explained about 93% of the relationship or variations; this is highly significant.

iii. The F-stat; of 59.47 with probability value of 0.00 assumes a very huge value when compared with the table value of 5.95. This implies that in the overall, our model is statistically significant in explaining the relationship between FPI and the explanatory variables.

4.1.3. Econometric Criterion

Using the Durbin-Watson value of 1.62, this value is much closer to 2 and it falls within the critical region or the region of decision, this suggests the absence of autocorrelation.

4.2. Policy Implications of Results

The statistical significance of the interest rate estimate implies that the interest rate has in a way attracted and aroused more investors’ interest in securing loanable fund to further invest in shares at the Nigerian Stock Exchange over the period of study. Likewise, the money supply was found to be statistically significant as well, implying that part of the money supply into the economy by the apex bank has enjoined a level of share price purchase given the period of study as well. The reason for this is not far-fetched since the CBN policies have always favoured lowering interest rate, thereby making loanable funds available for would be investors and at the same time, the apex bank have made money available through the process of money supplied to the economy. The non-statistical significance of other parameter estimates of exchange rate and inflation rate implies that the falling exchange rate has possibly led to the rise in the share prices, and somehow inflation rate do not necessarily determine rise in the price of shares in the Nigerian economy.
5. CONCLUSIONS AND RECOMMENDATION

5.1. Conclusions

The result of the logged estimates showed that the interest rate and money supply have both been a strong determinant of share prices in Nigeria. Likewise, the study reveals that the inflation rate may not necessarily determine the flow of international currency into her economy. Having examined the trends of share prices in the Nigeria Stock Exchange, the following findings were observed that exchange rate is a good determinant of share price movement. And that inflation rate as a variable was found to have a negative influence on share price. It therefore means that inflation is not good determinant of share price movement. However, it was further revealed that a rising naira exchange rate can lead to increase in the price of shares and increase in money supply also. Finally, the result shows that a growing and well developed capital market without lucid imperfections is a stimulating factor to the share prices.

5.2. Recommendations

It has been observed that over the years the Nigerian Stock Exchange has been experiencing tremendous expansion and wider patronage thereby enjoying a pride of place amongst emerging markets. To sustain this positive outlook, we therefore recommend that drawing from the significant contribution of money supply to share prices, henceforth more money should be properly channelled towards encouraging the viability of the NSE through the continuous purchase of the share prices. Furthermore, the exchange rate should be properly stabilized to guarantee the attract more of foreign investors into the Nigerian Stock Exchange. As it will greatly enhance and improve the development of the capital market and the economy as a whole. Also rising inflation rate can be controlled through price stabilizing mechanism so as not to cause unnecessary scarcity of fund thereby affecting share price purchase. The significant and positive effect of the interest rate should be sustained to guarantee easy access to more loanable fund for more investment in shares at the NSE thereby boosting the Nigerian economy.

Funding: This study received no specific financial support.
Competing Interests: The authors declare that they have no competing interests.
Contributors/Acknowledgement: All authors contributed equally to the conception and design of the study.

REFERENCES

Adam and Tweneboah, 2008. Do macroeconomic variables play any role in the stock market movement in Ghana. UK: School of Management, University of Leicester.


Appendix

Software Analyzed Results

Dependent Variable: LOG(SPN)

Method: Least Squares

Date: 03/03/15   Time: 15:43

Sample: 1991 2013

Included observations: 23

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>4.041188</td>
<td>2.561049</td>
<td>1.577942</td>
<td>0.1330</td>
</tr>
<tr>
<td>LOG(EXCHR)</td>
<td>0.160579</td>
<td>0.256733</td>
<td>0.625473</td>
<td>0.5400</td>
</tr>
<tr>
<td>LOG(INTR)</td>
<td>-1.831858</td>
<td>0.572364</td>
<td>-3.200509</td>
<td>0.0052</td>
</tr>
<tr>
<td>LOG(MSS)</td>
<td>0.724221</td>
<td>0.160521</td>
<td>4.511683</td>
<td>0.0003</td>
</tr>
<tr>
<td>LOG(INFR)</td>
<td>0.067282</td>
<td>0.158007</td>
<td>0.425815</td>
<td>0.6756</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.933303</td>
<td>0.933303</td>
<td>0.933303</td>
<td>9.383829</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.917610</td>
<td>S.D. dependent var</td>
<td>1.487637</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.427007</td>
<td>Akaike info criterion</td>
<td>1.332685</td>
<td></td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>3.099700</td>
<td>Schwarz criterion</td>
<td>1.580650</td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-9.659539</td>
<td>F-statistic</td>
<td>59.47098</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>1.616611</td>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
<td></td>
</tr>
</tbody>
</table>