

AN EMPIRICAL ANALYSIS OF SHARE PRICE DETERMINANTS IN NIGERIA: A DIVIDEND AND NET ASSET REPLICA

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Abstract: *In attempting to determine the factors that affect the prices of stocks generally in capital markets, two schools of thought exist. While a school of thought believes that accounting information are the major determinants of stock prices in capital markets, the other argues that the major determinants of stock prices are non-accounting information. This study therefore provides useful insights into resolving the contradicting arguments by analyzing some accounting measures (dividends and net assets) that Nigerian investors use in making investment decisions in order to take a standpoint whether or not, they significantly affect stock prices. Data obtained from the Nigerian Stock Exchange Fact Book and Annual Reports and Accounts of firms listed on the floor of the Nigerian Stock Exchange for the period 2001-2013 were obtained and analyzed using the Ordinary Least Square (OLS) technique. On the basis of the analyses, it was found among others that accounting information are the major determinants of stock prices in the Nigerian capital market. Based on the findings of this study, it was recommended among others that capital market regulators and accounting standard setters in Nigeria should properly educate investors on the attributes of accounting variables across the industries as these significantly have impact on the prices of stocks in the country.*

Keywords: *Stock Price, Stock Price Determinants, Dividends, Net Assets.*

JEL Classification: *D53, E43, E44.*

Introduction

Stock price determination remains an issue of concern in the capital market, especially in developing capital markets. In the capital market, various factors or instruments are used in the determination of stock prices. Among these determining instruments are accounting and non-accounting information. Accounting information refers to those statistics, facts, figures (often called ‘accounting numbers’) reported in the financial statement, statement of financial position and cash flows of firms while non-accounting information are those whose numbers are not reported in financial statements of firms but are good enough in determining the prices of stocks. Accounting information are net assets per share, dividend per share, earnings per share, book value per share, return on equity, profits among others while non-accounting information are rumour, inflation, exchange rates, forced of demand and supply, interest rates among others. Investors in the capital market make use of accounting and non-accounting information in choosing which firm they will invest or not. However, in this paper, we analyzed some useful measures of accounting information (dividends and net assets) that Nigerian investors use in making investment decisions in order to take a standpoint whether or not; they determine stock price movement in the capital market.

1 Statement of Problem

There are two schools of thought that have rocked the accounting literature as regards factors that determine prices of stocks in the capital market. Among these schools

of thought, one proposed that non-accounting information which emanates in the form of forced sales, rumour, speculation, monetary variables, gambling, company goodwill and so on are the formidable factors that determines prices of stocks in the capital market [13, 18, 22, 23]. Contrarily, the other school of thought proposed that accounting information which emanates in the form of earnings, book value, dividends, net assets, dividend cover, earnings yield and so on are important factors in stock price determination in the capital market [3, 4, 5, 7, 8, 14, 15, 21]. While there have been a number of studies on this topic in developed capital market [4, 7, 9, 12], to the best of our knowledge, there are relatively few studies on the subject of stock price determinants in emerging capital market like Nigeria. Negah [17] opined that it has not been expansively researched primarily because of problems with data availability. Thus the position above leaves much gap in the accounting literature in Nigeria for continuous research into the area so as to see whether accounting information are the formidable factors in stock price determination in the capital market.

Literature Review

As articulated in the preamble of this study, two factors have been identified to determine the prices of stocks in the capital market: accounting and non-accounting information. In line with this, earlier studies have examined the extent to which accounting or non-accounting information can be used to determine the prices of stock in capital markets. For instance, Udegbonam and Eriki [23] who examined the relationship between stock prices and inflation in Nigeria pointed that inflation had a significant negative influence on the behaviour of stock prices in the Nigerian capital markets. The study also revealed that the level of economic activity (usually measured by indices like GDP, money stock, interest rate, and financial deregulation) to a large extent drives stock prices in the Nigerian capital market. Interestingly, the study also found that oil price volatility has no significant effect on stock prices.

In another study, Jindrichovska and Kuo [10] investigated the influence of losses on the relation between returns and accounting earnings of 63 companies listed at the Prague Stock Exchange from 1993 to 1999. The study looked at similarities and differences between this transforming market and developed markets as well as the influence of losses on the informativeness of earnings. The results derived from an analysis of yearly data showed that earnings are less timely in reporting publicly available information, unlike in developed markets like the US. They attributed the different results of tests of their research, in comparison with results from developed capital markets, to non-standard properties typical of emerging markets such as irrational investment behaviour, lack of information, underdeveloped regulations and lack of transparency, which is partially due to lack of experience.

Ologunde, Elumilade and Asaolu [18] used an ordinary regression analysis to test the relationship between stock market capitalization and the prevailing interest rate in Nigeria and found that the prevailing interest rate in the country exerted positive influence on stock market capitalization. Similarly, in a study by Terfa [22] the error correction model was employed to examine the relationship between stock market and certain macroeconomic variables (interest rates and exchange rates) in Nigeria. In this study however, the all share index was used as a proxy for the stock market. The study found that in the short run, a significant negative relationship existed between stock market and the minimum rediscounting rate (MRR). This implies that in the short run, a decrease in the MRR, would improve the performance of the Nigerian stock market. The study also found that exchange

rate stability improved the performance of the stock market in the long run, while the rate of treasury bill as well as that of inflation were not significant; a suggestion that in the short run, they had a negative relationship with the stock market. This finding as Terfa [22] noted, implied that apart from maintaining a low rate of inflation in Nigeria, efforts must be made to keep the rate of Treasury Bills as low as possible so that the performance of the Nigerian stock market can be improved.

In a study by Mondal and Imran [15], the factors that influence share prices on some companies listed on Dhaka Stock Exchange was analyzed. In a bid to achieve the objective of their study, Mondal and Imran [15] analyzed the influence of selected variables on market price per common share. The variables studied by Mondal and Imran [15] included profitability, growth, liquidity, firm size, leverage, and the rate of dividend. The study however found that stock prices were affected by both qualitative and quantitative factors. While the qualitative factors included market sentiments, goodwill, Annual General Meetings (AGM), company announcements, technical influence, print and electronic media, unexpected circumstances, reports of analysts, etc, the quantitative factors on the other hand included dividend, EPS, capital, return on investment, price/earnings ratio, net income, retained earnings, inflation, exchange and interest rates respectively, etc. The study also stressed that price earnings ratio, speculations on stock price movements (stock price rumor), the demand for shares, changes in policies of government, in addition to the general economic conditions are the most influential factors that affects stock price.

Ghayoumi, et al. [6] examined the value-relevance of accounting information with evidence from Iranian emerging stock exchange from 1999 to 2006. The study used earnings per share and annual change of earnings per share as the income statement indices and book value of equity as the balance sheet index. Return and price models through regression analysis was deployed in their study and the results depicted that accounting information is value-relevance to domestic investors in Iran but however income statement information has more value-relevance than the balance sheet information. The study revealed that positive vs. negative earnings and firm size seems to have significant impact on value-relevance of accounting information.

Adejoh [2] examined the applicability of market efficiency to the Nigerian capital market. The study found that capital market responds to dividend, bonus announcement right issues and buyback. Thus, how quickly and correctly prices reflect these events can be seen as an indication of the level of efficiency of the stock market. Musyoki [16] explored the predictability of accounting earnings (Earnings per share, Dividend yield, Price to earnings ratio) and changes in share prices of companies listed on the Nairobi Stock Exchange during the period 2001 – 2005 using 11 firms and found positive relationship between accounting earnings and share price.

In analyzing a time series data obtained from the Central Bank of Nigeria during the period 1984 – 2010, Osisanwo and Atanda [20] who studied the determinants of stock market returns in Nigeria found among others that interest rate and exchange rate are the main determinants of stock returns in Nigeria. Osamwonyi and Asein [19] developed a model to assess the relationship between market returns and security returns in the Nigerian capital market. The model, as they noted, was tested with quarterly data that were obtained from capitalized firms in the Nigerian Capital market for the period 2001 – 2005. The study of Osamwonyi and Asein [19], however found a positive linear relationship between market returns (proxied by betas) and security returns for the sampled firms used in the study. Abdullahi, Lawal and Ibrahim [1] empirically evaluated the determinants of

average stock market return in the Nigerian Stock Market for the period of 2000-2004 and found that on the average, the estimated return on equity investment in the Nigerian Stock Market was low (about 7%). This low level of return observed in the Nigerian Stock Market seems to be a common feature among most emerging Stock Markets, the world over.

Kolapo and Adaramolola [11] examined the impact of the Nigerian capital market on its economic growth from the period of 1990-2010. The study tried to ascertain whether the performance of the stock market has a link with economic growth (proxied by Gross Domestic Product - GDP) and development of the country. Capital market variables considered in the study of Kolapo and Adaramolola [11] include Market Capitalization (MCAP), Total New Issues (TNI), Value of Transactions (VLT), and Total Listed Equities and Government Stocks (LEGS). Applying Johansen co-integration and Granger causality tests, the results showed that the Nigerian capital market and economic growth are co-integrated. In addition, Kolapo and Adaramolola [11] found in their study that there was a bi-directional causation between GDP and the value of transactions (VLT). They also found an unidirectional causality from Market capitalization to GDP and not vice versa. Malik, Qureshi and Azeem [14] explored the determination of share price using the Ohlson Model. They used two forms of model; one is linear valuation model and second is the non-linear product model. The latter uses the product of earnings and book value as third independent variable, in addition to traditional linear valuation model. The study according to Malik, Qureshi and Azeem [14] used data with respect to book value per share (BVPS) and earnings per share (EPS) of 52 companies drawn from the Karachi Stock Exchange (KSE). By using the Fixed Effects Model (FEM), Malik, Qureshi and Azeem [14] posits among others that information on published financial statements are useful to shareholders.

In addition, the study of Malaolu, Ogbuabor and Orji [13] investigated the macroeconomic determinants of stock price movements in Nigeria. In this study, the Engle-Granger two-step co-integration test was adopted to analyze time series data spanning from 1985 – 2010. Accordingly, Malaolu, Ogbuabor and Orji [13] pointed that both the long-run and short run relationships between stock price movements and movements in macroeconomic variables were analyzed in their study. They however found no co-integration between the variables analyzed; an indication that there was no relationship in the long run. Results of the regression analysis conducted by Malaolu, Ogbuabor and Orji [13] also indicated that real exchange rate, money supply, real interest rate, in addition to political instability are not the determinants of stock price movements in Nigeria; though, inflation, as they noted further, was a major determinant of stock price movements in the country. Ejubekpokpo and Okoro [5] explored the determinants of stock price movements with evidence from the Nigerian Stock Exchange. The study employed three accounting measures: book value, earnings and dividend cover during the period 2001 – 2011 by applying the ordinary least square estimation technique. The results of the study indicated that earnings, book value and dividend cover which are accounting measures serve as factors in the determination of prices of stock in the capital market in Nigeria. The empirical review paints a picture that diverse techniques of investigation were used to investigate issues surrounding capital market and these studies have yielded dissimilar results, sometimes sharply dissimilar, sometimes modestly. More so, concerns over research design and conflicting findings have caused earlier researchers to fail in addressing the position regarding share price determinants in both developed and developing capital markets. Thus, it is possible to empirically examine in Nigeria, variables that

determines stock prices in the Nigerian capital market, whether they are accounting numbers or not.

2 Methods

This study was designed to follow an ex-post-facto design. This design was adopted because it seeks to establish the factors associated with certain occurrence or type of behaviour by analyzing past events of already existing condition. However, the data collection method emanated from secondary data. Data of dividends per share and net assets per share were obtained from the Nigerian Stock Exchange Fact Book and Annual Reports and Accounts of firms listed on the Nigerian Stock Exchange during the period 2001 through 2013. A multiple regression model was estimated by linking stock prices as a function of dividends and net assets.

$$LDSP = F(DPS, NAPS) \quad \text{eq. 1}$$

$$LDSP_{it} = a + \beta_1 DPS + \beta_2 NAPS_{it} + e_{it} \quad \text{eq. 2}$$

Where: $LDSP$ = Last Day Stock Price
 DPS_{it} = Dividend per Share
 $NAPS_{it}$ = Net Assets per Share
 t = Time dimension
 i = Individual firm

Where $LDSP$ is the dependent variable; β_1, β_2 , are regression coefficients with unknown values to be estimated; $DPS, NAPS$, are the independent variables. A-Priori Expectation is such that $\beta > 0$ ($i = 1-2$). $LDSP_{it}$ is stock share price, and it is measured in the end of December at year $t+1$. DPS is dividends per share and $NAPS$ is net assets per share at fiscal yearend computed in ratio. The error term (e_{it}) is used as surrogate for all other variables not included in the model. The Ordinary Least Square (OLS) estimation technique was used in analyzing the data via the Statistical Package for Social Sciences (SPSS, 20.0).

3 Problem Solving/Discussion

The tests results were presented and analyzed in order of priority. The descriptive statistics came first, which was followed by the Analysis of Variance (ANOVA).

a. Descriptive Statistics

Tab. 1: Sensitivity of Dividends per Share to Stock Prices

Sample = 120	Mean	Minimum	Maximum
Sensitivity Coefficient (β_i):	0.355	-0.321	0.822
Sign of Sensitivity Coefficient (β_i):	Positive: 89(74.2%) Negative: 31(25.8%)		

Source: SPSS Output & Author's Compilation

Table 1 above presents the estimates of the sensitivity of dividends per share to stock prices in the Nigerian capital market. It was observed that dividends coefficient for the sampled firms ranged between -0.321 and 0.822 minimum and maximum values respectively with mean value of 0.355. Also, 89(74.2%) of the firms dividend per share were positively sensitive while 31(25.8%) were adversely (negatively) sensitive to stock prices. Thus, the results indicated that majority of the firms dividends per share are sensitive to stock prices with the large proportion being positively sensitive to stock prices.

Tab. 2: Sensitivity of Net Assets per Share to Stock Prices

Sample = 120	Mean	Minimum	Maximum
Sensitivity Coefficient (β_i):	0.274	-0.343	0.851
Sign of Sensitivity Coefficient (β_i):	Positive: 109(90.8%) Negative: 11(9.2%)		

Source: SPSS Output & Author's Compilation

Table 2 above presents the estimates of the sensitivity of net assets per share to stock prices in the Nigerian capital market. It was evident that net assets per share coefficient for the sampled firms ranged between -0.343 and 0.851 minimum and maximum values respectively with mean value of 0.274. Also, 109(90.8%) of the firms net asset per share were positively sensitive while 11(9.2%) were adversely (negatively) sensitive to stock prices. Thus, the results indicated that majority of the firms net assets per share are sensitive to stock prices with the large proportion being positively sensitive to stock prices.

b. Analysis of Variance, Regression Coefficients and T-Value

In this subsection, the goodness of fit statistics came first, followed by goodness of fit through r-square. The regression coefficients and t-value results concludes this aspect of the analysis.

Tab. 3: ANOVA Result (Goodness of Fit Statistics)

Model	Sum of Squares	Df	Mean Square	F.	Sig.
1 Regression	19.213	1	2.419	34.271	0.000 ^a
Residual	23.242	119	0.227		
Total	42.455	120			

Source: SPSS Regression Output

a. Predictors: (Constant), DPS & NAPS

b. Dependent Variable: LDSP

Table 3 summarizes the information about the variation of the dependent variable explained by the existing model as well as the residual that indicates the variation of the dependent variable not captured in the model. The results suggest that the independent variables offer a significant effect on the dependent variable, where f-value is 34.271 with p-value less than 0.05 (i.e. $p < 0.000$) suggesting that the model is significantly good enough in explaining the variation on the dependent variable.

Tab. 4: Goodness of fit through R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.981 ^a	0.851	0.751	0.535677

Source: SPSS Regression Output

a. Predictors: (Constant), DPS & NAPS

As shown in table 4 above, the value of adjusted R^2 is 0.751, indicating that the independent variables in the model are explaining 75% variation on the dependent variables with only 25% unexplained variation. Thus, we can understand that the model of the study is providing a good fit to the data.

Tab. 5: Regression Coefficient and t-value(s)

Variables	Coefficients	t-statistic	Prob.
Constant	45214	9.358	0.000
DPS	0.561	2.718	0.008
NAPS	0.753	3.193	0.010

Source: SPSS Regression Output

As indicated in table 5 above, the explanatory variables, dividends per share (p-value = 0.008) and net assets per share (p-value = 0.010) were statistically significant at 5 percent or lower. The result also suggests that there is a positive relationship between all the independent variables (dividends per share and net assets per share) and stock prices in the Nigerian capital market.

Conclusion

In the context of this present study, dividends per share, net assets per share (as measures of accounting information) and stock prices were examined for a sample of 120 listed firms on the Nigerian Stock Exchange during the period 2001 through 2013. The conclusion reached was that significant relationships exist between dividends, net assets and stock prices. In reality, dividends are the most widely used parameters for investment decisions in Nigeria. Therefore, dividends have large effects on stock prices as well as the net assets per share. Since the evidence indicated that dividends per share and net assets per share plays significant role in stock price determination, this paper takes on by proposing that accounting information are the major determinants of stock prices in Nigeria. This calls for recommendation that accounting preparers and standard setters should enhance the quality of information reported in financial statements by firms listed on the Nigerian Stock Exchange. The Financial Reporting Council of Nigeria (FRCN) and Securities and Exchange Commission (SEC) should urge listed firms to fully adopt and implement International Financial Reporting Standards (IFRSs) if evidential improvement in the quality of financial statements must be achieved. Finally, lot of hard work is required by capital market regulators and accounting standard setters to properly educate the Nigerian investors about differences in attribute accounting variables across the industries.

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