Determinants of Stock Price Movement in Nigeria: 
(Evidence from the Nigerian Stock Exchange)

Ejuvbekpokpo A. Stephen¹ and Edesiri G. Okoro²
1. Department of Economics, Faculty of Social Science, P.M.B. 01, Delta State University, Abraka, Nigeria
   Ejirosteve2@yahoo.com
2. Department of Accountancy, Faculty of Management Science, Nnamdi Azikiwe University Awka, Nigeria
   edesirioracle@yahoo.com

Abstract
Stock prices serve as the basis for the assessment of whether a firm is breaking even or not. These prices are relevant metrics of returns to stakeholders, therefore the value attached to them matters so much to both existing and prospective investors in the capital market. This study thus examined by a means of robust analysis, factors that determine stock price movement in Nigeria for the period 2001 – 2011. Data were sourced from the financial statements of 99 listed firms in the Nigerian Stock Exchange. The analysis of the data sourced was done with the Ordinary Least Square (OLS) method. The results suggest that earnings per share, book value per share and dividend cover serve as factors in the determination of stock prices. The results of the study thus calls for recommendation that the government and policy makers in Nigeria should implement more stringent rules, backed up by legislations that will enhance the information reported in the financial statements of firms listed on the Nigeria Stock Exchange as well as compelling listed firms to adopt IFRS. Also, the accounting information reported in the capital market should constantly reposition itself in response to changing expectations. This implies that it should be viewed as an open system and in other words, feedback both from within and outside its environment should drive the constant repositioning of accounting information.

Keywords: Earnings Per Share; Dividend Per Share; Book Value Per Share; Stock Market;

I. Introduction
The movement of prices in the stock market is among a few phenomena that have cut across the boundaries of academic disciplines and have cumulative research evidence spanning almost a century (Lee, 2001). Today the field of financial market research seems to be at the exciting stage of “crisis” as past results are being questioned and new solutions are being proposed. There seems to be growing dissatisfaction among academic researchers with the body of literature developed on the assumption of market efficiency of the capital market. Keynesian ideologies on speculative market phenomena are being resurrected to explain the volatile nature of the capital market while only time will tell whether or not the present crisis will lead to a revolution in thought and development of a coherent theory of capital market behaviour.

In recent times, the inherent dynamics and high volatility of emerging market like Nigeria have been mirrored profoundly in the gyration of stock prices on the floor of the Nigerian Stock Exchange. The market has exhibited a vagary of movements that have culminated into returns diminutions and capital depreciations across all sectors (Abosode and Oseni, 2011). But as activities in the capital market continue to nosedive and selling pressures remain high, a section of market participants has attributed the trend to panic and non-availability of accounting information while another camp of analysts opined that exogenous variables (non-accounting information) sparked off by government’s loose monetary policies is the formidable cause. However, there are several factors in share price determination in the capital market; these factors are either accounting or non-accounting information (Khanagha, 2011; Cheng, Shamsher, and Annuar, 2008).

Accounting information refers to the means by which we measure and communicate economic events whether we are managing a business, making investments or monitoring how we have received or use money. Accounting information emanates in the form of ratios which could be earnings per share, dividend per share, book value per share, net assets per share, dividend cover and others, the basis on which profits and other relevant stock return criteria are computed. Non-accounting information on the other hand refers to information other than accounting which can be speculation, forced sales, gambling and rumour. Several studies have shown that non-accounting parameters such as speculation, gambling, and forced sales form the basis for the determination of share prices (Cheng, Shamsher, and Annuar, 2008; Francis and Schipper, 1999). Khanagha (2011) posited that accounting standards as regulatory devices are the most important factors in share price determination in the capital market. This study favours the philosophy that accounting information serves as determinants of stock price movement in the capital market.
Theoretically, accounting parameters which emanates in the form of earnings per share, dividend per share, book value per share, net assets per share, dividend cover, are formidible factors that determine share prices in the capital market (Oyerinde, 2009; Jang, and Lee, 2010; Glezakos, Mylonakis and Kafouros, 2012). Concerns over research design and conflicting findings have caused earlier researchers to fail in addressing this position. Therefore, the positions above leaves much gap in the accounting literature as to the need for continuous research into the area, especially as regulatory requirements for improvement in financial reporting standards compliance increases. To the best of our knowledge, a crucial gap in literature still exist in this area since there is little empirical research to identify factors that determines the movement of stock prices in Nigeria.

II. Literature Review and Empirical Framework

According to Meyer (2007), accounting plays a significant role within the concept of generating and communicating wealth of companies through financial statements. Financial statements still remain the most important source of externally feasible information on companies. In spite of their widespread use and continuing advance, there is some concern that accounting practice has not kept pace with rapid economic and high technology changes which invariably affects accounting information. The importance of Meyer’s assertion is reinforced by massive accounting fraud in developed countries, rapidly changing business environment and reports by some researchers that accounting information has declined especially in their relevance (Lev and Zarowin, 1999; Francis and Schipper, 1999).

Historically, market data have always prevailed over accounting data when it comes to identifying the factors that affect stock prices (Glezakos, Mylonakis and Kafouros, 2012). They further opined that in the latest years, an increasing number of empirical studies indicated that the financial statements of enterprises contain certain parameters that play a critical role in the course of their respective equities in the capital market. This finding was not unexpected since after 2000 the International Accounting Standards (IAS) was improved and established across the world. Therefore, the information offered to all users of accounting information and investors are now more accurate and enlightening than ever before especially with the transition to International Financial Reporting Standards (IFRS) by many countries of the world.

Hendriksen and Van-Breda, (1992) asserted that the main reason for which accounting information is generated is to facilitate decision making. However, for financial reporting to be effective, among other requirements, it must be relevant, complete and reliable. These qualitative characteristics require that the information must not be unfair nor has predisposition of favouring one party over the others. Accounting information should therefore give a decision maker the capacity to predict future actions. It should also increase the knowledge of the users to identify similarities and differences in the information provided. Therefore, reliable accounting information can be described as an essential pre-requisite for capital market growth. Based on the “engine of economic growth” potential of the capital market, developed nations do not toy with their capital markets and financial reporting.

Stock price movements and accounting information variables have been a subject of research (Balsari and Ozkan, 2009; Bo, 2009; Filip and Raffournier, 2010). Glezakos, Mylonakis and Kafouros (2012) examined the impact of accounting information on stock prices in Anthens. They found that the explanatory power of earnings and book value in the formulation of prices increases over times. In addition, the study showed that earnings appear to play an increasingly diminishing role in the interpretation of stock prices, compared with the book value and in an attempt to interpret this, it is assumed that investors strive more towards fundamental parameters of businesses, than stock market data. Similarly, Collins, Maydew and Weiss (1997) carried out a study to examine the relationship between book value per share and earnings per share. In their study, Collins, Maydew and Weiss (1997) found that the explanatory power of earnings and book values has not declined in the last forty years but on the contrary, the explanatory power has increased in the same period. This conclusion is reached by several other authors as Barth, Beaver and Landsman (1998) and Keener (2011), while Burghstahler and Dichev (1997) studies suggested that the function which describes the relationship between stock prices and earnings and book values is convex.

Holthausen and Watts (2001) and Negakis (2005), after reviewing relevant literatures on the impact of accounting information on stock prices, concluded that earnings and book values do not affect in the same manner stock prices. Other studies (Hirschey, Richardson and Scholz, 2001; Jacobson, 2001; Graham, Cunnice and Sayre, 2002; Al-Harbi, 2003; Liang and Yao, 2005; Junttila, Kallunki, Karja and Martikainen, 2005; Tan and Lim 2007), have identified a variety of relationships between accounting information and stock prices. A number of researchers have provided evidence that the effect of earnings and book values on stock prices is different for different industries (Hughes, 2000; Boone, 2002; Riley, Pearson and Trompeter, 2003) or different
countries (Filip and Raffournier, 2010; Alsaman, 2003; Martinez, 2003; Habib, 2004; Goodwin and Ahmed, 2006; Ibrahim et al., 2009; Bo, 2009).

Chen, Chen and Su (2001) investigated the value relevance of accounting information in China. Using a sample of all listed firms in the Shanghai and Shenzhen Stock Exchanges from 1991 to 1997; they examined whether accounting information is useful in stock valuation in the Chinese stock market. Despite the young age of the China stock market and the perception of inadequate accounting and financial reporting in China during that period studied, using both the return price model and the price model, they found fairly convincing evidence that accounting information is value relevant to investors in the Chinese market. Gjerde, Knivsflå and Sættem (2007) focused on the value relevance of financial statements in Norway over the 40-year period from 1964 to 2003. Norway is an example where employing an earnings-oriented conceptual framework has improved the value relevance of accounting information. They applied stock market return regression over time using deflated earnings and deflated change in earnings as explanatory variables. By controlling for changes in underlying economic variables over the period, they found that the value relevance of financial reporting for investors trading on the Oslo Stock Exchange has increased significantly over the past four decades. A significant time trend is consistent with the view that Norwegian accounting regulators and standard setters has been successful in achieving more value relevant financial statements over time.

Balsari and Ozkan (2009) examined the value relevance of earnings and book value during financial crises in Turkey. Their study covered non-financial firms listed in Istanbul Stock Exchange in Turkey for the years from 1992 to 2007. During this period Turkey experienced economic crises of 1994 and 2001 each with different characteristics. Their results showed that the different crises of 1994 and 2001 have different implications for value relevance of earnings. They concluded that value relevance of earnings is more influential in a long period of economic worsening followed by an economic crisis compared to a sudden shorter crisis.

Dontoh, Radhakrishnan and Ronen (2007) found evidence suggesting that stock prices may not be an appropriate benchmark for gauging the information content of accounting earnings. They examined the predictive content of stock prices and accounting information. Their analysis suggests that the predictive content of earnings and prices declined over time, the predictive content of price signals declined by even more. They reasoned that the decline could be the consequence of increased noise in stock prices over time resulting from increases in trading volume driven by non-information based trades, and not just a decline in the predictive content of earnings. Such conclusion is consistent with the insights of the noisy rational expectations equilibrium framework analysis that increased noise has caused the predictive content of prices to degrade over time.

Pirie and Smith (2005) investigated the relationships between stock prices and accounting information using the Residual Income and Ohlson Models. The findings of the study depicts that earnings and book value together have considerably more explanatory power than either variable alone and that the explanatory power varies in different accounting regimes but however, in many cases, a significant part of the variance remains to be explained and may be attributed in part to the variables in the theoretical model that represents other value relevant information. They also suggests that accounting-based measures used by investors or business managers to estimate or value creation are likely to be more effective if they focus on both earnings and book value rather than on one or other of the main variables alone.

In a study, the significance of accounting information in explaining market and book values: the case of Indonesian Banks by Soewarno and Utami (2010), they employed the price models whereby stock prices are used as proxy for market value as the dependent variable and banks’ accounting information – earnings (net income), risk (loan loss provision ratio) and cost efficiency (operating cost ratio) as independent variables was used to test the link between book and market values. The findings of the study revealed that earnings is found to be value relevant in explaining the gap between market and book values; also bank’s efficiency provides incremental information and the value relevance of banks’ efficiency has an important implication for regulators and policy makers, especially in developing and emerging markets.

Ramasawmy and Ramen (2010) carried out a study on an investigation of the usefulness of accounting information for financial analysts in Mauritius. The findings of the study point out that different item of accounting information are valued differently depending on the qualification level, working experience and the post occupied by the users. That user tends to value mandatory disclosure more than voluntary disclosure; quantitative information more than non-quantitative information and forward-looking information than historical information. The study further reveals that most mandatory information is quantitative in nature and most voluntary accounting information is non-quantitative in nature.

Abosede and Oseni (2011) investigated firm and market-specific proxies of information asymmetry on equity prices in the stock markets in Nigeria by using the theory of information as propounded by Akerlof in 1970. The study revealed that the impact of information asymmetry on equity pricing in emerging and
developing economies where market efficiency are mostly in the semi-strong and weak forms are very few and also the direct proxies of information asymmetry produce verifiable and less subjective outcomes than proxies derived from data manipulation, therefore identifying and selecting the firm and market-specific proxies require the understanding of the firm and market dynamics that impact significantly on equity pricing. 

The literature explored so far is informative that accounting data is deemed to be superior if it can better explain stock price. Also, majority of the empirical studies used book value and earnings without considering other accounting parameters, with a relatively few studies that were carried out in Nigeria. This present study therefore tries to add to existing literature, whether other accounting information parameter(s) that will be added to book value and earnings, determines the movement of stock prices in the capital market in Nigeria.

III. Methodology

The present analysis was based on the Ohlson’s (1995) model which was developed according to the suggestions of Preinrich (1938), Edwards and Bell (1961) and Peasnell (1982). It expresses the stock price as a function of the earnings per share and the book value per share. The explanatory power of earnings and book value is estimated below:

\[ P_{it} = a + bEPS_{it} + cBVPS_{it} + e_{it} \]  
(eq.1): Basic Ohlson’s Model

Furthermore, the present study have incorporated a third accounting information parameter (Dividend Cover). The explanatory power of dividend cover can then be incorporated in the general model as in equation 1 above, which translates into the model below:

\[ P_{it} = a + bEPS_{it} + cBVPS_{it} + cDIVCOV_{it} + e_{it} \]  
(eq.2:) Integrated Ohlson’s Model

Where:

- \( P_{it} \) = Price Per Share (PPS)
- \( EPS_{it} \) = Earnings Per Share
- \( BVPS_{it} \) = Book Value Per Share
- \( DIVCOV_{it} \) = Dividend Cover
- \( e_{it} \) = Residuals in the model/error term

The data used spanned from 2001-2011 for the 99 listed firms on the Nigerian Stock Exchange. The data of Price Per Share is the dependent variable and Earnings Per Share, Book Value Per Share and Dividend Cover as the independent variables.

IV. Results and Discussion

The firms under study cut cross the various sectors of the Nigerian economy. Appendix I showed the firms used for the study according to their industrial grouping. The tests were done in order of priority. The OLS result came first and the correlation result came next.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistics</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>0.245198</td>
<td>0.295657</td>
<td>3.216</td>
<td>0.0076</td>
</tr>
<tr>
<td>BVPS</td>
<td>0.267861</td>
<td>0.254312</td>
<td>2.489</td>
<td>0.0076</td>
</tr>
<tr>
<td>DIVCOV</td>
<td>0.219876</td>
<td>0.314536</td>
<td>2.543</td>
<td>0.0076</td>
</tr>
<tr>
<td>C</td>
<td>-2.472921</td>
<td>3.786334</td>
<td>-0.871</td>
<td>0.6218</td>
</tr>
</tbody>
</table>

\( R^2 = 0.96 \); \( R^2_{adj} = 0.87 \); \( F\text{-stat}=98.341; \) Prob.(F-Stat) =0.000, Dw =2.136; F-crit =4.00; t-crit =1.671

The \( R^2 \) suggest that 96% of the total variation in Price Per Share (PPS) has been explained by Earnings Per Share (EPS), Book Value Per Share (BVPS) and Dividend Cover (DIVCOV). This is a good fit since the unexplained variation is just 4% (1 - 0.96). The \( R^2 \) which is the adjusted \( R^2 \) for degrees of freedom suggests that 87% of the changes in the dependent variable have been explained by the independent variables and this is also a good fit. The t-test is used to test the statistical significance of the independent variable in explaining the changes in the dependent variable developed along independent lines by Fisher and jointly by Neyman and Pearson (Gujarati, 2005). The decision rule of the t-test is that if t-calculated > t-critical, it suggests that the particular independent variable is statistically significant in explaining the changes in the dependent variables. The t-test suggests that all the variables are statistically significant in explaining the changes in the dependent variable. The implication is that earnings per share, book value per share and dividend cover are statistically significant in explaining the changes in price per share.

The result of the study revealed some sort of sign and magnitude. The sign is that, there is a positive linear relationship between the dependent and independent variables. Also, the magnitude herein is that, an increase in the earnings per share, book value per share and dividend cover by 1unit will lead to an increase in the price per share by 0.25units, 0.27units and 0.22units respectively. The Durbin Watson (Dw) test with value
2.136 did not show evidence for the existence of first order serial correlation in the model. Additionally, the f-test with a value of 98.341 which is greater than the f-crit (4.00) with probability of 0.0000 is an indication that earnings per share, book value per share and dividend cover are significant factors to be considered when explaining movement in stock prices.

Table II: Summary of Correlation Results

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>Variance Inflator Factor (VIF)</th>
<th>Tolerance Level (TL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>Partial</td>
<td>Part</td>
</tr>
<tr>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Closely related to but conceptually very much different from regression analysis is correlation analysis, where the primary objective is to measure the strength or degree of linear association between the dependent and independent variables. Also, the Pearson Correlation Coefficient was used to establish the inter-correlation among the dependent and independent variables. This was done using some indices of the Pearson Correlation Coefficient as summarized in table II above. It was evident in table II above that there is a perfect collinearity between earnings per share, book value per share, dividend cover and price per share. This was established by the VIF and TL with values (1.000) and (1.000) respectively. Using the Zero, Partial and Part Correlation, the degree of association is positive and strong between the dependent and independent variables.

V. Conclusion/Recommendations

In the latest years, academic research has shown that in an increasing number of countries, certain accounting parameters affect stock price movements and also that this effect becomes stronger with time. In the context of this study, earnings per share, book value per share and dividend cover of 99 listed firms were examined in the Nigerian Stock Exchange during the period 2001-2011. The result is indicative that the explanatory power of earnings per share, book value per share and dividend cover are statistically significant in explaining the movement in stock prices. In an attempt to interpret this finding, it is assumed that earnings per share, book value per share and dividend cover are major determinants of stock price movement in the Nigerian Stock Exchange. We therefore argued that the importance of our study lies with the consideration that it is one of the few studies that explicitly evaluate other accounting parameters (earnings per share, book value per share and dividend cover). It is therefore concluded that sustainable development of the capital market in Nigeria can be boosted through reliable accounting information because without confidence in it, investor’s confidence erodes, liquidity dries up, fair and efficient markets simply cease to exist and in turn, investors will not invest adequately the capital market.

The results of the study thus calls for a recommendation that the government and policy makers in Nigeria should implement more stringent rules, backed up by legislations that will enhance the information reported in the financial statements of firms listed on the Nigeria Stock Exchange as well as compelling listed firms to adopt IFRS. The adoption of IFRS will compel diligence, accountability and responsibility in preparation and application of accounting standards. There should be an inclusion of flexibility of information into the accounting information system so that the awareness of its benefits can be created. The inclusion of information on flexibility is however only feasible if it provides decision-useful information (i.e. if it understood by users); Also, the accounting information reported in the capital market should constantly reposition itself in response to changing expectations. This implies that it should be viewed as an open system and in other words, feedback both from within and outside its environment should drive the constant repositioning of accounting information. Finally, stock prices are influenced by other factors like speculation, forced sales, gambling and rumour. These factors have been held constant and do not form part of this paper but should be considered in the determination of stock prices.

References


