VALUE RELEVANCE OF ACCOUNTING INFORMATION IN THE BANKING SUBSECTOR OF THE NIGERIA STOCK EXCHANGE (NSE)

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ABSTRACT: *This study investigates the value relevance of accounting data in the Nigerian Stock Market. The primary objective of the study is to determine if there is a relationship between accounting numbers and share prices in the Nigeria Stock Market. The value relevance of accounting data was measured by the correlation coefficient between stock prices and some accounting numbers. In an attempt to estimate the model, linear regression was used. While there has been a number of studies on this topic in the developed countries, at the time of this work, no extensive study in Nigeria, based on existing knowledge has explored the subject. The results show that accounting information has ability to capture or summarize information that affects equity value and there is relation between accounting numbers and share prices in the Nigerian Stock Market.*

KEYWORDS: Value Relevance, Earnings

INTRODUCTION

International accounting organizations, such as the International Accounting Standards Board (IASB), the Financial Accounting Standards Board (FASB) and the Nigerian Accounting Standards Board (NASB), have called for more value relevant accounting standards to improve the quality of accounting information and to promote convergence towards global accounting standards (FEE, 2000; GAAP, 2000; 2001). These institutions expect that value relevant, harmonious accounting standards will help create a credible common accounting framework for a globalized capital market. Differences in countries' institutional environmental, accounting regime and corporate governance structure are research themes associated with value relevance nowadays. Evidence appoints that, in developed capital markets with decentralized stock control and better governance practices, accounting figures tend to be more relevant for investors (Lopes & Walker, 2011).

However, value relevant, harmonious accounting standards alone are not sufficient to improve the financial reporting environment. Accounting standards should be of good quality, and be acceptable and enforceable. Value relevance is one of the basic attributes of accounting quality (Francis, LaFond, Olsson & Schipper 2004 and Beisland, 2009). High

quality accounting information is a pre-requisite for well-functioning capital markets and economy as a whole and as such should be of importance to investors, companies, and accounting standard setters. Investors rely on accounting information in their pricing of shares and scompanies, which provide good quality information, have thus an advantage in a lower cost of capital. In transition countries, capital is scarce and investment risk relatively high.

Research on value relevance of accounting information, its historical development and its comparison among different countries has increased since the 1990s. There has been concerns as to whether financial statements are losing their value relevance due to the shift from an industrialised economy to a high-tech, service oriented economy(Collins, Maydew & Weiss 1997; Brown, Lo & Lys 1999; Francis & Schipper, 1999 and Lev & Zarowin, 1999) and as to whether cross-country differences in disclosure and measurement practices cause differences in the quality of accounting information(Harris, Lang & Möller 1994; Joos & Lang, 1994; Alford, Jones, Leftwich & Zmijewski 1993 and Amir, Harris & Venuti 1993).

Recent value relevance studies recognize and operationalise institutional factors affecting the level of accounting quality among the countries (Ali & Hwang, 2000; Ball 2003 and Hung, 2001). Value relevance of financial accounting in emerging markets economies, however has so far been studied sporadically. Numerous studies (Ball, Kothari & Robin, 2000, Arce & Mora 2002, Black & White 2003, Callao, Cuellar & Jarne 2006, Devalle, Onali & Magarini, 2010), indicated that the role of accounting information, especially role of earnings in the process of stock price formation significantly differs from country to country –despite globalization and accounting standards harmonization.

Ali and Hwang (2000) found strong relationships between the value relevance of accounting and some country-specific factors. Initially, they found that value relevance is lower for countries with bank-oriented (as opposed to market oriented) financial systems. In those countries there is a lower demand for accounting information because banks and other stakeholders have direct access to information. In those countries accounting information has no role as a reducer of information asymmetry. Second, they found that value relevance is lower for countries where private-sector bodies are not involved in the standard setting process. Central to the future of accounting is the continuing relevance of accounting measurement for corporate management and firm valuation. The rise of new economy companies brings into question the elaborate structure of financial statements audited for conformity with GAAP. The recent market correction notwithstanding, there is undoubtedly a market perception that net income statements are losing ground as reliable indicators of future growth prospects. Unless accountants come up with metrics for new economy firms, their credibility will suffer across the board. However, over the last half century the profession has progressively abandoned business measurement functions that rely on subjectivity, focusing instead on those with structured measurement rules. The profession has moved away from making judgments, sometimes at the expense of relevance. Rules and processes that were appropriate in the past are showing increasing levels of irrelevancy and have resulted in a profession in turmoil.

Research Problem

The value-relevance of accounting information is one of main research topic in capital market research, which assumes if financial accounting numbers were related to stock prices, thus making the accounting information useful to investors.

The value-relevance stream of research is based on the premise that if information is useful, investors will adjust their behaviour and the market will respond quickly through changes in share prices. Therefore, information is considered relevant if share returns are associated with the release of the information.

The information content of accounting earnings is based on the understanding that accounting earnings, as a performance measure, are value relevant (Beaver, 1998; Kallunki & Martikainen, 1997; Lev, 1989). There has been significant range of studies, since Ball and Brown (1968), empirically showing the importance of accounting earnings as value-relevant information for investors (Liu &Thomas, 2000; Das & Lev, 1994; Wild, 1992; Easton & Harris, 1991; Collins & Kothari 1989).

This study addresses issues as to whether the combined value-relevance of earnings and book values has increased over time in the banking subsector of the Nigeria stock exchange markets because of capital market infrastructure innovations. Hence, the following research questions are developed:

- What is the relationship between accounting numbers and share prices in the Nigerian Stock Market?
- To what extent is the quality of accounting standards is positively associated with the value relevance of accounting earnings?
- To what extent is the quality of accounting regulatory environment is positively associated with the value relevance of accounting earnings?

Objectives of the Study

The purpose of this study is evaluation of the relationship between accounting information and capital market values (market values) in the Nigeria banking sector. Specifically, we seek to determine if:

1. There is a relationship between accounting numbers and share prices in the Nigerian Stock Market
2. There is a relationship between the quality of accounting standards and value relevance of accounting earnings.
3. The quality of accounting regulatory environment is associated with the value relevance of accounting earnings.

Research Hypotheses

1. **H$_1$:** There is a relationship between accounting numbers and share prices in the Nigerian Stock Market.
2. **H$_2$:** The quality of accounting standards is associated with the value relevance of accounting earnings.
3. **H$_3$:** The quality of accounting regulatory environment is associated with the value relevance of accounting earnings.

LITERATURE REVIEW

The value relevance literature deals with the usefulness of financial statement information in equity valuation. From the perspective of an actual or potential equity investor it is desirable that a firm's financial statement information in general and accounting information in particular be usable in generating indications of equity value. Accrual accounting is designed to measure performance over past periods. While accrual accounting mostly deals with the history, valuation is about the future. According to traditional valuation theory based on economic theory, the value of a stock is equal to the present value of future net dividends. Hence, the principal purpose of accounting is not to facilitate valuation. The trade-off between the relevance and reliability principles is also likely to influence the value relevance of accounting information. For example, the historical cost basis of accounting is fairly reliable, but historical costs might lack relevance (Scott, 2003). Abandonment of the revenue-recognition principle might increase the relevance of accounting information, but it would surely result in decreased reliability. Similarly, income measurement based on fair values of assets might increase the relevance of accounting information, but might result in decreased reliability. The reliability principle is one of the main reasons why financial statements lack forward-looking information that influence market values (Kothari, 2001).

Holthausen and Watts (2001) suggest that value relevance studies use two different theories of accounting and standard setting to draw inferences:

(i) "direct valuation" theory and
(ii) "inputs-to equity-valuation" theory

Direct valuation theory proposes a link between accounting earnings and stock market value. In direct valuation theory, accounting earnings is intended to either measure or be combined with the equity market value changes or levels. However, Zaleha, Muhd-Kamil, Jagjit & Hamezah (2008) point out that the conclusion usefulness paradigm proposes that accounting information is useful if utilized by users of financial statements for, or significantly associated with their decision making (Riahi-Belkaoui, 2000) even though the information might not be stated at their best current value (Scott, 2000). Within this conception, the main users are those who make decisions having an impact on firms' value, specifically decision-making by capital market participants (Beaver, 2002; Riahi-Belkaoui, 2000). In discussing the concept of relevance with regard to accounting information, Riahi-Belkaoui (2000) believes that accounting information is relevant if the information can influence decisions made by decision makers (i.e., its value relevance concept).

VALUE RELEVANCE RESEARCH

The value relevance literature is comprehensive and diverse. The various studies differ, among other ways, in the perspective on accounting (measurement versus information), market assumptions (efficient versus inefficient), and research methods applied. Francis and Schipper (1999) have identified four different approaches to studying the value relevance of accounting information. These approaches are:

(i) The fundamental analysis view of value relevance
(ii) The prediction view of value relevance
(iii) The information view of value relevance, and
(iv) The measurement view of value relevance

The Fundamental Analysis view of Value Relevance

The first approach is related to fundamental analysis research in accounting. Fundamental analysis involves determining a firm's intrinsic value without reference to the price at which the firm's equity trades on the stock market (Bauman, 1996). According to this approach, accounting information cause stock prices to change by capturing values toward which market prices drift (Francis and Schipper, 1999).

It is not assumed that the market at all times reflects all available information, which means that this approach allows for an inefficient stock market. The value relevance of financial statement information is inferred by measuring returns generated by implementing trading strategies based on accounting information. Hence, depending on the degree of market information inefficiency, investors might be able to earn abnormal returns using public accounting information. This implies that accounting information can be relevant in valuation if portfolios formed on the basis of accounting information are associated with abnormal returns.

Many studies have examined the usefulness of various types of accounting information in predicting future returns (Bernard, Thomas and Wahlen, 1997) for a review of accounting-based trading strategies. They include, for example, investment strategies based on the histories of accounting earnings growth (Chan, Jegadeesh, & Lakonishok, 1996), trading strategies that imply a long position in firms with relatively less accruals and selling short firms with relatively more accruals in their accounting earnings (Sloan, 1996), and investing in firms with low ratios of market value to accounting fundamentals (Fama and French, 1992 and Lakonishok, Shleifer & Vishny, 1994). Most of these studies indicate that accounting information is useful in predicting future returns.

The Prediction view of Value Relevance

The second interpretation of term value relevance identified by Francis and Schipper (1999) is also related to fundamental analysis research. It focuses on the relevant variables to be used in valuation and how to predict them. According to this definition of value relevance, financial statement information is regarded as value relevant if it helps in forecasting underlying value attributes derived from valuation theory. Hence, information is relevant if it can be used to predict future earnings, dividends, or future cash flows. Most previous studies in this field have focused on earnings prediction. For example Ou and Penman (1989) examined whether the information in financial ratios can be combined to yield accurate forecasts of future earnings. Consistent with the fundamental analysis view, they also studied whether trading strategies based on information about future earnings growth generated abnormal returns. A similar Swedish study was conducted by Skogsvik (2002), who examined whether the information contained in a large number of financial ratios could be combined to accurately predict future return on equity. Trading strategies were then implemented based on these predictions.

Another example of a study that adopts the second view is that of Lev and Suogiannis (1996). They examined, among other matters, whether current research- and-development expenditures were associated with future earnings. A main purpose of accounting is to provide investors with relevant information for their investment decisions. A large body of research has, therefore, studied the statistical association between accounting information and stock prices. The purpose of this research is to identify accounting items that indicate firm value, and consequently can be useful for valuation purposes. According to Dumontier and Raffournier (2002), this field is probably one of the most frequently researched areas in

accounting nowadays. The third and fourth interpretations of value relevance provided by Francis and Schipper (1999) focus on the statistical association between financial statement information and stock prices or returns.

The Information view of Value Relevance

According to the third interpretation of value relevance, accounting information is value relevant if it is used by investors when setting prices (Francis & Schipper, 1999). Under the assumption that the stock market is efficient, statistical association measures are used as indicators as to whether investors actually use the information in question when making investment decisions. Studies adopting this approach generally concentrate on short time periods (Beaver, 1997). Their purpose is to study the market reaction to accounting disclosures over short time intervals, such as the days or weeks around an announcement date. Accounting information is hypothesised to be value if it conveys information that modifies investor expectations of the firms' future cash flows, and ultimately causes the stock price to change (Scott, 2003). Hence, a return is the natural market metric in such studies. This approach implies that value relevance is measured in terms of market reactions to new information. In other words, accounting information has value relevance if the stock market reacts upon the disclosure of it. Note, however, that researchers adopting this approach typically refer to the accounting figures as having "information content" instead of using the term "value relevance" (Beaver, 1997).

The starting point for research in this field was the ground-breaking research of Ball and Brown (1968) and Beaver (1968). The former study examined the average firm's market response, in terms of returns, to announcements of annual earnings. Beaver (1968), on the other hand, studied the stock trading volume effects of earnings announcements. Following and extending the research methodology established in (Beaver, 1968) and (Ball and Brown, 1968), numerous researchers have been investigating the market reaction to announcements of accounting information. The majority of the work in this field deals with the relationship between earnings and its components and stock prices. This is not surprising, since earnings together with book value are the most important accounting figures under accrual accounting.

Foster (1976) for example, investigated the market reaction to quarterly earnings announcements in the US. Pope and Inyangete (1992) observed a strong increase in the volatility of security returns around the annual earnings announcement date in a sample of UK firms. Other studies have focused on the price effect of specific accounting items and various measures of earnings in financial statements. Therefore they investigated the market reaction to various adjusted earnings measures. Livnat and Zarowin (1990), on the other hand, investigated whether the information in the various cash flow components is more value relevant than the information in a summary cash flow number. Another example of a study based on the information view of value relevance is that of Peasnell, Skerratt & Ward (1987); they studied the value relevance of current cost information.

The Measurement view of Value Relevance

The underlying idea behind the fourth approach is simple but compelling. A key role of financial statements is to summarize business transactions and other events.

Under this construct, the value relevance of financial statement information is measured by its ability to capture or summarize information, regardless of source, that affects equity value

(Francis and Schipper, 1999). The fourth interpretation is consistent with a measurement perspective on accounting. That is, accounting is viewed as an instrument for measurement (Marton, 1998). Note that this approach, in contrast to the information view, does not assume that investors are actually using the information under examination, or that the information is the most timely source of information. Instead, inference is based on the notion that if an accounting item (or other items) has a reliable association with a market metric, then the accounting metric captures or aggregates the information that is used by market participants to determine prices or returns. In that respect, they can be classified as indirect tests of the usefulness of accounting information for valuation purposes (Dumontier & Raffournier, 2002). Another implication is that they never can answer the question as to whether market participants are using the information correctly. Also note that one implication of this approach is that accounting information can be value relevant, but not decision relevant, if it is outdated because more timely information exists (Barth, Beaver & Landsman 2001).

METHODOLOGY

Research Design

This study employed the case study research design in order to have an in depth understanding of value relevance of accounting information in Nigerian banking industry. The method of data analysis used in this study is the regression analysis. The Ordinary Least Square regression technique would be adopted in this study due to its cherished properties of unbiasedness, inefficiency and consistency.

The Population and Sample of the Study

The population of this study consists of all banks quoted on the Nigerian stock exchange. The study used 8 banks quoted on the Nigerian stock exchange which covered a period of 10 years from 2001 to 2010. The choice of the sample period was based on the availability of data for the study.

Method of Data Analysis

This study will use the price model of measuring value relevance of financial information.

The model in its econometric form is presented below:

$$SP = B_0 + B_1 IS + B_2 BS + e$$

Where:

SP = Average Stock price of the banks

IS = Income statement (EPS)

BS = Balance Sheet (BVS)

Et = Error term

APRIORI SIGN

$B_0 > 0$ $B_1 > 0$ $B_2 > 0$ $B_3 > 0$

DATA ANALYSIS AND INTERPRETATION

Descriptive Statistics

The descriptive statistics of the variables used in the study is shown below:

TABLE ONE: Descriptive Statistics

	EPS	BVS	SP
Mean	259.6250	753.5250	8103.450
Median	178.5000	346.0000	4449.500
Maximum	1065.000	4021.000	24100.00
Minimum	9.000000	30.00000	420.0000
Std. Dev.	239.7386	932.2694	7529.910
Skewness	1.614411	1.912638	0.588600
Kurtosis	5.095579	6.440841	1.958813
Jarque-Bera	49.38915	88.24044	8.232890
Probability	0.000000	0.000000	0.016302
Observations	80	80	80

Source: Eview Output (2013)

The table above shows the descriptive statistics of the variables used. The minimum earnings per share in the banking sector was about 4 kobo while the maximum earnings per share in the banking sector was about 1065 kobo. On average the earnings per share in the banking sector is about 259.62kobo. The minimum book value per share in the banking sector was about 30 kobo while the maximum book value per share in the banking sector was about 4021 kobo. On average the book value per share in the banking sector is about 753 kobo. The minimum share price in the banking sector was about 420 kobo while the maximum book share price in the banking sector was about 2411 kobo. On average the share price in the banking sector is about 813 kobo. The Jaque Bera (JB) statistics showed that all the variables are normally distributed.

Correlation Analysis

The correlation analysis of the variables used in the study is shown below:

TABLE TWO: Correlation Analysis

EPS	1.000000	0.315600	0.527695
BVS	0.315600	1.000000	0.574473
SP	0.527695	0.574473	1.000000

Source: E-view Output (2013)

The table shows that the co-efficient of correlation of a variable with respect to itself is 1.000. This indicates that there exists a perfect correlation between a variable with respect to itself. The correlation co-efficient between the dependent variable and independent variables are discussed below:

   i.   The result showed a positive relationship between banks earnings per share (EPS) and its share price (SP). This indicates that an increase in banks earnings would lead to an increase in the share price. The relationship between EPS and SP is strong since the correlation co-efficient of 0.527 indicates that the strength of relationship between earnings per share (EPS) and its share price (SP) is about 53%.
   ii. There exists a positive relationship between banks book value per share (BVS) and its share price (SP) with a value of 0.574. This means the strength of relationship between them is about 57% which shows a strong positive relationship between banks book value per share (BVS) and its share price (SP).

The result showed a direct relationship between banks earnings per share (EPS) and its book value per share (BVS). This indicates that an increase in banks book value per share would lead to an increase in its earnings per price. Although, the relationship between EPS and BVS is weak since the correlation co-efficient of 0.315 indicates that the strength of relationship between earnings per share (EPS) and its book value per share (BVS) is about 32%

Regression Analysis

The Regression analysis of the study is shown below:

TABLE THREE: Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2208.927	974.3219	2.267143	0.0262
EPS	12.08327	2.763529	4.372408	0.0000
BVS	3.659338	0.710658	5.149227	0.0000
R-squared	0.463279	Mean dependent var		8103.450
Adjusted R-squared	0.449338	S.D. dependent var		7529.910
S.E. of regression	5587.691	Akaike info criterion		20.13130
Sum squared resid	2.40E+09	Schwarz criterion		20.22062
Log likelihood	-802.2520	F-statistic		33.23183
Durbin-Watson stat	0.520545	Prob(F-statistic)		0.000000

Source: Eview Output 2013

A close examination of the Durbin Watson statistic of 1.15 indicates the presence of first order correlation in the model. Due to the problems encountered in the preliminary ordinary least square result, which include the presence of first order autocorrelation, the use of a higher order estimating techniques was inevitable, in order to eliminate the presence of first order autocorrelation and improving the overall result. The Cochrane Orcutt method was used. The result obtained from the Cochrane-Orcutt method AR 1 converged after 8 iterations is shown in the table below.

Cochrane-Orcutt method AR (1) converged after 8 iterations Result
TABLE FOUR: Cochrane-Orcutt method AR (1) converged after 8 iterations Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5633.345	2973.025	1.89482	0.062
EPS	9.424533	2.803844	3.359963	0.0000
BVS	1.956901	0.672131	2.911488	0.0047
AR(1)	0.872838	0.058148	15.0106	0
R-squared	0.820287	Mean dependent var		8011.089
Adjusted R-squared	0.813099	S.D. dependent var		7532.282
S.E. of regression	3256.362	Akaike info criterion		19.06391
Sum squared resid	7.95E+08	Schwarz criterion		19.18389
Log likelihood	-749.0246	F-statistic		114.1109
Durbin-Watson stat	1.996323	Prob (F-statistic)		0

Source: Eviews Output (2013)

The result of the Cochrane-Orcutt method AR (1) converged after 8 iterations shows that the co-efficient of determination (R^2) has improved from 0.46 to 0.82. This means that the model can explain about 82% of the systematic variations in SP, only about 18% of the systematic variations could not be explained by the model, which was taken care of by the stochastic error term. Also, the adjusted R-square of 0.81 means that after adjusting for the degree of freedom, the model could still explain about 81% of the systematic variations in SP. This

means that there is a high goodness of fit of the regression line hence, the model has a high predictory power.

An investigation of the test of the overall statistical significance of the model shows that the model is still significant since the observed f-value of 114 is greater than the critical F-value of 5.00 at the conservative 1% level of significance. This means that all the independent variables (EPS and BVS) have significant impact on SP. The Durbin-Watson statistics with a value of 1.99, implies that with aid of Cochrane – Orcutt method AR (1) converged after 8 iterations has completely eliminated the presence of first order autocorrelation in model, hence, we have more confidence in our model. Thus, any conclusion drawn from this study could be taken seriously, since the model has a high predicatory power and also be used as a guide for further research.

Based on the individual statistical significance of the variables, it was observed that all the variables passed the test of significance. EPS with an observed t – value 3.35 is greater than the critical t – value of 2.0 at 1% level of significance. Also, BVS with an observed t – value of 2.91 is greater than the critical t – value of 2.0 at 5% level of significance. This implies that EPS and BVS are major determinants of SP and thus value relevant to investors in Nigeria. This agrees with the findings previous studies such as (Lopes, 2001; Collins, Maydew & Weiss 1997), they found that value relevance of earnings and book value was significant in Germany and Switzerland.

EPS with a co-efficient of 9.42 shows that an increase in the earnings per share would lead to an increase in the stock price of the company, which shows a positive relationship between stock price and earnings per share. BVS with a co-efficient of 1.95 shows that an increase in book value per share, would lead to an increase in the stock price, which also indicates a positive relationship between stock price and book value per share. It was observed that the dependent variable (SP) had a constant value of 5633 kobo over the period under study.

DISCUSSION OF FINDINGS

The value-relevance of accounting information is clearly supported by the current findings from the price model (with two independent variables) in the Tehran stock exchange. The results also show that all coefficients are statistically significant. Comparison of coefficients indicates that EPS has a higher explanatory power than BVP. The higher explanatory power of EPS for Nigerian means that EPS plays a significant role in explaining prices. Prior research also showed that value relevance of BVP was lower than EPS in the Nigerian stock market. A comparison based on price model of periods before and after reform, showed that the explanatory power (R^2) for the period before reform is higher than for the period after reform, which implies that the value relevance of accounting numbers decreased in the period after reform. This finding may mean that reforms in accounting standards did not improve the relevance of accounting numbers in the Nigerian stock exchange. This supports the finding of Pourheydari, Aflatooni & Nikbakhat (2008) who showed that the trend of value relevancy of EPS and BVP decreased over the period 2001 to 2010 in the Tehran stock market. To provide more convincing evidence of the value-relevance of accounting earnings, this study also used the returns model. The return model indicated that EPS level and changes of EPS information were value-relevant. Results for the return model also documented a decline in the value-relevance of accounting earnings for the period after reform

CONCLUSION AND RECOMMENDATION

The results show that accounting information has ability to capture or summarize information that affects equity value and there is relation between accounting numbers and share prices in the Nigerian Stock Market. This is demonstrated through the aggregate markets reaction to accounting numbers. Therefore, it can be inferred that sustainable development of the Nigerian stock market can be boosted through reliable accounting information. Without confidence in accounting information, investors will not invest adequately in the Nigerian stock exchange.

The accounting preparers and standard setters should enhance the quality of earnings because it receives attention of most investors. In addition, policy makers should implement more stringent rules; backed up by legislations that will enhance value relevance of accounting information. This will compel diligence, accountability and responsibility in preparation and application of accounting standards. This in turn will increase investors' confidence in Nigerian stock market and by extension, economic growth.

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