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Value relevance of Financial Statements Information: Evidence from listed firms in Kenya

Melissa A. Nyabundi[1]

Abstract

This study examined the relationship between share prices and dividends, earnings and book values for companies listed on the Nairobi Securities Exchange (NSE) in Kenya for the six years period between 2005 and 2010. Using panel data analysis the study found evidence that there is a positive and significant relationship between stock prices and dividends, earnings and book values for the firms listed on the NSE. The study established that dividends have more explanatory power compared to earnings and book values.

JEL classification: D03, D81, G02
Keywords: Value relevance, market prices, book value, Nairobi Securities Exchange

1 Introduction

Accounting information and the pricing of shares play a significant role in investment decision making. The relevance of the different accounting parameters differ with the success and financial condition of the company. To a financially secure firm, earnings and the rate of return of earnings provided to the investor are

[1] Revenue Officer, Kenya Revenue Authority , Nairobi, Kenya,
e-mail: melissaokoth@gmail.com

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of greatest significance. Companies in some degree of financial distress, for example, are likely to sell at low prices relative to book values.

The information-signaling hypothesis argues that since there is an information asymmetry between the management and shareholders, the only way for the management to signal future prospects is by changing the dividend payout.

Capital markets react to various corporate announcements, and one such significant announcement is the earnings announcement. The basic idea underlying market efficiency is that competition will drive all information into the price quickly. Certain investors – especially high net worth individuals and institutional investors have access to better information and subsequently may have lower required returns. This could be due to information asymmetry between investors and firm management. The information content of dividends, earnings and book value therefore refers to the information implied in these variables that can help an investor re-evaluate their investment strategies and affect share prices. The level of information asymmetry can be characterized by the risk of trading with a privately-informed investor.

A firm’s choice of disclosure quality which it can define as the precision, timeliness, and quantity of information provided-affects this information risk by altering the distribution of public and private information among investors. Dividend information content therefore affects the market prices depending on the penetration, perception and the reaction on the information by investors.

Earnings are not the only available source of information to investors as other more timely reports containing the same information exist. Thus by the time annual earnings are released, any potential information content has already been used by investors and stock prices reflect the same. It can therefore be argued that earnings report have little or no information content. The literature argues that earnings announcements are one of the important signaling devices used by managers to transmit information to the public about the firm’s future prospects. Management further uses earnings information to inform both shareholders and investors about the state of health of a firm. In other words, earnings announcements provide a yardstick that can be utilized by the market to assess the wealth and profitability of a firm.

Earnings per Share (EPS) are among the figures in the financial statements often looked out for by investors. Earnings and earnings-based valuation are associated with stock returns and, therefore, such measures are considered relevant.

The literature linking the firm’s earnings to changes in the firm’s market value (i.e., stock returns) depends on three assumptions about the information contained in earnings and share prices. First, it assumes that financial reporting provides information to equity shareholders about current and expected future profitability, the second assumption is that current and expected future profitability provides shareholders with information about the firm’s current and expected future dividends, third it assumes share price equals the present value of expected future dividends to the shareholder. Accordingly high quality financial statement information is a pre-requisite for well-functioning capital market and the economy as a whole and as such they are of high importance to investors-both individual and institutional, regulators among other stakeholders. These links imply that new financial statement earnings information that triggers a change in investors’ expectations for future dividends should correspond with a change in the market value of the firm.

Although there has been substantial research on the changes in the relevance of financial statement information in the developed markets, there are few such studies of other developing markets such as Kenya. It is unclear whether the trends found in the developed markets also exist in other markets especially the developing economies.

The objective of this study was therefore to evaluate whether dividends, earnings and book value explain changes in share prices for companies listed on the Nairobi Securities Exchange (NSE) from 2005 to 2010. In order to achieve this objective the study examined the information content of earnings, book values and dividends using panel data analysis. While most research in this area has concentrated mostly on explaining share price by book value and reported earnings, this study analyzed the combined effects of earnings, book values and dividends on share prices.

1.1 Stock Market activity in Kenya

Stock markets are a vital component of a developing economy as they provide listed companies with a platform to raise long-term capital and also provide investors with a forum for investing their surplus funds. The markets also offer trading, investment, speculation, hedging, and arbitrage opportunities for investors. Kenya has witnessed a surge in the privatization of previously fully state-owned companies. This sparked Kenyans interest in the NSE and capital markets as a whole. Increased level of activity at the NSE has led to multiple Initial Public Offers (IPOs), increased foreign investor participation, cross border listings and investments and the current vision to see more securities other than the traditional equity instruments traded in the Nairobi Securities Exchange. In 2006, the Exchange became the first securities market in East and Central Africa to fully automate its clearing, settlement and trading systems with the switch to the Automated Trading System (ATS). ATS ensures that orders are matched automatically and are executed on a first come/first serve basis. The ATS has now been linked to the Central Bank of Kenya and the CDS (Central Depository System) thereby allowing electronic trading of Government bonds. The implementation of the ATS greatly enhanced the Exchange’s trading capacity as was demonstrated by the record breaking October 4th 2006 trading session, when for the first time, the trading turnover exceeded the Kshs 1.0 billion mark.

Further development of the NSE has seen an increase in the number of stockbrokers, investment banks and establishment of credit rating agencies while the number of listed companies has increased over time. In 2009, there was a shift from equity to relative safety of fixed income securities due to the global financial crisis and the economic downturn. The Ken Gen Public Infrastructure Bond Offer (PIBO) of 2009 was Kenya’s largest public debt issue. Trans-century, an infrastructure investment firm was the first firm at the NSE to issue a convertible bond in 2011. This is an indication of the growth and development of the capital market as it can now be used to finance infrastructure development and maintenance.

The NSE 20 share index showed indications of growth between 2005 and 2007 and started declining from 2008. There was a slight decline in the number of equity transactions due to the 2008 political turmoil, loss of investor confidence and panic selling due to the collapse of stockbrokerage firms because of poor management making investors steer away from the market.

Equity turnover grew substantially however a decline was seen in 2009. Bond turnover, on the other hand, was highest in 2009 indicating a shift from equity to the bond market.

There was a significant increase in the number of IPOs between 2001 and 2008. The general economic growth of Kenya has been on an upward trend due to the liberalized operating environment thus enabling firms to expand and seek funds from the NSE. They used IPOs as a means of raising funds. Equity bank, however, chose to be listed by introduction in 2006. This led to an increase in the number of investors opening CDS accounts in order to transact in the NSE since 2004. The year 2008 recorded the highest number of CDS accounts opened by investors whether local individuals and companies or foreign individuals and companies. This has also led to the witnessing of an increase in the percentage of holding by East African institutions since 2002. A good business environment enhances firms’ capacities to undertake investments in the capital market. There has been a decline in the number of foreign investors in the NSE during the same period while the number of local investors peaked in 2008. This can be attributed to the euphoria that came with the Safaricom IPO that saw a 532% subscription rate.

Investor decision making relies on the relevance and reliability of the financial statement information which help them to evaluate past, present and future events. Kenya adopted the use of International Financial Reporting Standards (IFRS) in 1999. All listed companies in Kenya are required to prepare their financial statements based on IFRS while complying with their respective industry specific regulatory requirements. Kenya’s adoption of IFRS came at a time when there were numerous bank failures raising questions as to the reliability of audited financial information, especially as the financial statements of these banks did not provide any early warning signs of impending failures. The adoption of IFRS was used to promote confidence in the capital market and the business environment. There is therefore need to assess whether financial statement information relates to stock prices in the Kenyan capital market infrastructure.

1.2 Statement of the problem

In an efficient market, any earnings or dividend announcement contains information which influences the stock prices positively or negatively. Investors use that information to make investment decision accordingly. Many individual investors only have access to published financial statements while making their investment decisions. Individuals see a stock price rising and are drawn into the market in a kind of bandwagon effect, thus many irrational investors in Kenya. The NSE has and is still experiencing a lot of overreaction by irrational investors who either follow the herd mentality or have no basis for their buy or sell decisions. Companies report billions of shillings in profit and many investors have rushed to buy their shares only to be issued with meager returns as dividend at year end. The question that begs to be answered is whether investors can rely on financial statement information for investment decision making purposes in Kenya. A number of studies have been under taken establishing the relationship between the financial statement information and performance of shares. Most of these studies were carried out in developed countries. Some literature including Collins, Maydew, & Weiss [1] has indicated that the current financial reporting systems are still relevant towards assessing the share price. Lev & Zarowin [2] however indicate that there is a decline in the value of accounting information. According to Njehu [4] not many stakeholders are well informed about investment in the stock market in Kenya. This significantly affects the performance of the NSE. This study therefore sought to examine the relationship between share prices and financial statement information. It sought to investigate and compare the relevance of earnings, dividends and book values in relation to share prices based on financial statement information from Kenyan listed firms.

1.3 Purpose of the study

Financial statement information studies enable the researcher to assess financial statement information usefulness and shed light on the issue of market efficiency, while providing helpful insights to stock market participants and authority. The importance of this study stems from the lack of affordable alternative information sources in Kenya such as timely earnings forecast, management conference calls, etc. Many ordinary Kenyans cannot afford to pay for financial investment advice from investment advisors or financial analysts. Most transactions are executed by individual investors who rely mainly on the published accounting numbers which do not reflect the information asymmetry existing, if any. They have limited access to firm research by financial analysts. Disclosures by public companies are not done to the expected standards according to CMA reports. Some audit reports have proved unreliable as the firms collapse without any indication in their financial statements. This study has provided insights to investors on the company fundamentals to assess while using financial statement information in the investment process. Capital market authorities are now also able to enforce proper disclosures by public companies. This study adds to existing literature on emerging markets by investigating the association between financial statement information and stock prices. Despite extensive global research literatures available, theoretical understanding of the decision making role of financial statement information in Kenya remains limited. This study therefore sought to emphasize the roles of the financial statement information with respect to the Kenyan market.

1.4 Research Objectives

1.4.1General objective

The general objective of this study was to examine the relationship between share prices and dividends, earnings and book values for companies listed on the Nairobi Securities Exchange (NSE).

1.4.2Specific objectives

From the above outlined general objective, the specific objectives were as follows:

i. To examine the extent to which earnings explain share prices;
ii. To analyze the relationship between book values and share prices;
iii. To investigate whether dividends can explain share prices;
iv. To assess the combined effect of earnings and book values in explaining share prices; and the combined effect of earnings, book values and dividends on share prices.

1.5 Research Questions

Based on the discussion in the literature, the relationships between share price and dividends, earnings and the book value form the research questions:

i. To what extent do earnings explain share prices?
ii. To what extent do book values explain share prices?
iii. To what extent can dividends explain share prices?
iv. What is the combined effect of earnings and book values in explaining share prices and to what extent do the combined earnings, book values and dividends explain share prices?

1.6 Significance of the study

This study sought to determine to what extent an investor can rely on financial statement information in Kenya. First, the study contributed to the understanding of the use and application of financial statement information in Kenya. It indicated which financial statement information variables are in use and add value in the investment decision making process. A guideline on what to look at while reviewing a firm’s financial statement information before committing their money to an investment will help a lot of individual investors.

Secondly the study provided information on investing in shares in the Kenyan capital market. This information is valuable to market authorities (the CMA and NSE), capital market players such as dealers, investment advisors and their clients. The study provided evidence for the need to re-enforce information disclosure and financial market’s transparency. It also provided useful data on the Kenyan capital market and its development.

This study presented the empirical evidence for the relevance of accounting earnings, dividends and book value of equity towards the valuation of share prices in the Kenyan equity market. The evidence presented will enhance the body of literature, specifically relating to the research on the relevance of accounting information and, generally to capital markets research in Kenya as a whole.

Finally, the evidences presented in this study shall assist the standard setters and other academicians in order to examine the degree of usefulness and association of data to regulators who would want to improve the trading and disclosure practices of listed companies. The study is a base for future studies of the equity valuation and its application in Kenya.

2 Literature review

Several theories concerning the relationship of share prices and financial statement information variables have been documented in the financial literature. In 1961, Miller and Modigliani advanced the dividend irrelevance theory which theorizes that in a perfect world where there is no corporate and personal taxes, no transaction and floatation costs, no single individual can affect a security’s price through his/ her trade. Therefore, all individuals have similar expectations with respect to a company’s future investment and profit, and the value of a company and thus its share prices are unaffected by the distribution of dividends. The Dividend Irrelevance Theory is crucial for the formulation of further theories that account for various imperfections in the real world.

2.1 Market efficiency

In efficient markets, it is expected that when information arises it is reflected quickly into the prices of stocks. When the price of a financial asset reflects all the relevant information that is available about the intrinsic value of an asset, the market is termed an efficient market. The informational efficiency of stock prices helps investors to determine their trading strategies in order to earn excess returns or beat the market.

Thus, Malkiel [5] notes that neither technical analysis, which is the study of past stock prices in an attempt to predict future prices, nor even fundamental analysis, which is the analysis of financial information such as company earnings, asset values, etc., to help investors select stocks. However, most investors focus on companies rather than on stocks. Froidevaux [6] asserts that investors need to understand that a good company is not necessarily a good investment.

Imperfect capital markets are those with information asymmetries. The basis of efficient market hypothesis is that any variable change announcements should only have an impact on stock prices if they are unanticipated by capital market participants. Thus the individual investor lacking prior knowledge of any expected earnings or dividends announcements will react to this new information and affect share prices at the NSE.

2.2 Signaling theory

According to signaling theory, also referred to as the information content hypothesis, corporate announcements are hypothesized to have information content, for example, managers use cash dividend announcement to signal changes in their expectation about the future prospect of the company when the markets are imperfect. The investments and financing decisions of a firm are made at the management's discretion. It is argued that company managers use earnings as a signaling tool to convey information about the prospects of a company, and that like dividends, if earnings convey useful information, this will be reflected in stock price changes immediately following a public announcement.

An increase in equity (shares) issued by the company reduce the price of its shares, stock splits cause an increase in the price, while issuing more debt instruments leads to price increase actions. Berhardt, Douglas, & Robertson [7] in their study noted that the markets are rarely in equilibrium, that information has a cost and that it does not reach all at the same time.

When a firm announces its earnings or dividends it sends a signal to the investor and if they react to this signal as expected this will affect the share prices of the company listed at the NSE.

2.3 Information asymmetry

Information asymmetry in the stock market occurs when one or more investors possess private information about the firm’s value while other investors are uninformed.The secrecy in most company operations leads to information asymmetry which is revealed when the firm faces serious financial crisis or is on the verge of bankruptcy. Thus it is expected that the asymmetric response to bad and good news reduces the ability of investors to interpret various firm performances.

The information content inherent in a dividend announcement would cause the shareholders to react to the announcement and thus influence share prices because of information asymmetry between a company's management and outside investors. Managers use the release of earnings announcements to validate some of their verbal declarations. Nonetheless, investors are more interested in the financial statements with the details leading to the revealed earnings figures.

2.4 Empirical review

Since the seminal research by Ball & Brown[8] who examined the relationship between accounting numbers and equity valuation and found that financial statement information affects share price, studies seeking to demonstrate a link between accounting numbers and equity values are numerous.

Bernard [9] was one of the first to gauge the relevance of accounting data. He compared the explanatory power of a model in which share price is explained by book value and earnings versus a model of share price based on dividends alone. He found that 68 percent of the change in equity market prices can be explained by the current book value and only three years of forecasted abnormal earnings. He also demonstrated that forecasted dividends only explain 29 percent of the variation in stock prices.

Results of the Pettit [10] study demonstrated that substantial information is conveyed by announcements of dividend changes. They also implied that a dividend announcement when forth coming may convey significantly more information than the information implicit in an earnings announcement.

In a study of the impact of dividend and earnings on stock prices, Hartono [11] argues that a significantly positive impact is made 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.

Dung [12] studied the Vietnamese stock market and found that earnings and book value correlate the most with stock prices at the end of financial year adjusted for errors. This is a sign that financial statement information is reflected in prices with a time lag.

Basu [13] found out that bad news has a smaller impact on prices than good news. In addition, extraordinary profits presented by companies are likely to be more temporary than main results. Basu [13], also, proved that the asymmetric response to bad and good news reduces the ability of earnings to interpret various performances.

Burgstahler & Dichev [14] combined earnings and book values in an option-style valuation model and showed that when the earnings-to-book value ratio is high, earnings is the more important determinant while when the ratio was low, book value is the more important determinant. They argued that a high earnings-to-book value ratio signaled that the firm was likely to continue its current activities successfully; hence earnings played a relatively more important valuation role. Conversely, when the earnings-to-book value ratio was low, the firm was more likely to employ its resources to alternative uses; therefore, the book value was a more important value driver.

Using data over a 40-year period from 1953 to 1993, Collins, Maydew, & Weiss [1] find that, while there is no indication of a decline in the combined relevance of book value and earnings during the period, there was a shift in relevance from earnings to book value. Based on their findings, they conclude that while earnings have become less relevant, book value has become more relevant.

Lev & Zarowin [2] in their analysis, found that book value also had declining relevance, which they attributed to the business changes caused by innovative activities that were mostly in the form of intangible investments. The inadequate and improper treatment of these activities such as research & development, brands and human resources by the traditional financial statement system caused the usefulness of financial statement information to deteriorate.

A model of price in terms of book value and dividends highlighted the overlooked valuation role of dividends. Brief & Zarowin [3] found that dividends have information content, that is, dividends provide information about a firm's permanent earnings.

How, Huang, & Verhoeven [15] in a study of information asymmetry found that overall, information asymmetry reduces after earnings and dividend announcements, implying that these events contain new information.

Dechow, Hutton, & Sloan [16] examined the role of book value under Ohlson's model and concluded that a valuation model based on earnings and book value performs modestly better than a valuation model based on earnings alone.

In an analysis of the association between stock returns and earnings in the context of the Greek capital market, results indicated a significant relevance of accounting numbers in explaining stock returns under the Price and Return model specifications (Dimitropolous, [17]).

Houthasen & Watts [18] found that earnings and book values would measure, or be highly associated with equity market values or changes in equity market values.

According to the study by Dechow [19] earnings displayed a stronger association with returns than the cash flows. Further Dechow [19] proposed that when a firm is experiencing changes in working capital requirement, cash flows may have severe matching and timing problems and as such would be less able to reflect performance.

Cheng, Liu, & Schaefer [20] investigated the effect of earnings performance on the information content of cash flows. They found that both earnings and earning changes are relevant. They suggest that the stock market looks to cash flows as an alternative source of information if inadequacies are provided in the earnings number.

Gee-Jung [21] investigated the relative and incremental relevance of book value, earnings and cash flows in security prices in Korean stock market from 1994 to 2005. He found that book value is the most relevant variable. Further, the combined relevance of book value and cash flows is more relevant than that of book value and earnings.

Collins, Maydew, & Weiss [1] in a study that covered 40 years, found that the relevance of earnings has decreased while that of book value has increased. Further they document the relative tradeoff between earnings and book value coefficients when earnings are negative. This relationship is found to persist even after size, risk and earnings persistent are taken in to account.

Martin [22] used the Ohlson [23] model to explore the possible links between accounting method choices and the ability of investors to use reported earnings to predict future earnings. The association was positive.

Brief & Zarowin [3] compared the relevance of book value and dividends versus book value and reported earnings. They found that, overall, the variables, book value and dividends, have almost the same explanatory power as book value and reported earnings. Second, when earnings are transitory and book value is a poor indicator of value, dividends have the greatest explanatory power of the three variables. The relevance of dividends is also confirmed.

Barth, Beaver, & Landsman [24] conducted research motivated by the differing roles of the balance sheet and the income statement. Results indicated that for firms in financial distress, the relevance of book value dominates that of earnings, and more generally, the relative importance of each variable differs across industries due to the degree of unrecognized assets (the greater the amount of unrecognized assets, the lower the relevance of book value).

A study in Iran by Pourheydari, Aflatoni, & Nikbakhat [25] compared the relevance of book value and dividends versus book value and reported earnings in the Tehran Stock Exchange from 1996 to 2004.The results indicated that there was a positive relationship between dividends, book value and earning, with stock market value in the Tehran Stock Exchange.

Eng, Li, & Mak [26] found that there are differences in value relevance of accounting information across countries, and that these differences may be explained by disclosure practices and market efficiency. Changes in the incremental value relevance of earnings are opposite to that of book value in most countries.

Keener [27] examined the differences in the value relevance of earnings and book values across industries and suggested that the joint value relevance of earnings and book values has not decreased however; the incremental value relevance of earnings has increased while that of book value stayed constant for the sample period. The study demonstrated that there is no significant variation in the incremental value relevance of earnings and book values across industries.

Glezakos, Mylonakis, & Kafuoros [28] examined the impact of earnings per share and book value per share in the formulation of stock prices, for a sample of companies listed in the Athens Stock Exchange during the period 1996-2008, by applying a methodology focusing on the coefficients of determination of the performed regressions. The results suggest that the explanatory power of earnings and book value in the formulation of prices increases over time. It is also found that, in the last years, earnings appear to play an increasingly diminishing role in the interpretation of stock prices, compared with the book value.

Ragab & Omran [29] in a study based on the Egyptian market found that there is strong evidence that accounting information is value relevant in the Egyptian stock market.

Oyerinde [30] carried out an investigation to find out the relevance of accounting information in Nigeria and found that there is a relationship between market price and the accounting information. Further the study concluded that without confidence in accounting information investors will not invest in stocks.

Various studies conducted in Kenya have focused more on the role of firm dividend policy in determining share prices. Aduda & Kimathi [31] in their study of a sample of 18 listed companies that paid dividend consistently from 2002-2008 found that the relationship between stock market prices and dividends paid was uneven from year to year and where there was a relationship it was insignificant. Bitok [32] studied the effects of dividend policy on the value of the firms quoted at the NSE and found that dividend policy was irrelevant.

Muindi [33] in his study on the relationship between Earnings per Share (EPS) and Dividend per Share (DPS) found that there is significant relationship between EPS and DPS.

Wandeto [34] in an empirical investigation of the relationship between dividend changes and earnings found that there was a strong positive relationship between DPS and EPS. Thus dividend is the most sensitive to earnings.

To the best of my knowledge no study has been conducted to assess the relationship between share prices and financial statement information in the context of the Kenyan securities market.

3 Method of Analysis

This study employed panel data analysis for estimating the regression models. All the relationships studied can be characterized by joint heterogeneity of most variables involved. That is, most explanatory variables in the model are either simultaneously determined by the dependent variable or have a two-way causal relationship with it. In addition, this study recognizes that there may be unobserved company specific effects and ignoring them may produce inconsistent estimates. Where endogeneity exists, estimation methods like Ordinary Least Squares method will not be consistent because the assumption of strict exogeneity of the explanatory variables is violated. (Andrianivo & Yartley, [35])

Arellano & Bond [36] proposes using a dynamic panelized data that optimally exploits the linear moment restrictions embodied in a dynamic panel model. In such models, equations can be estimated using data in levels.

Panel data analysis was employed because it has the inbuilt capacity to deal with heteroskedasticity and autocorrelation common in time series data, solve issues of few data points for regression model and retain entities heterogeneity (Baltagi, [37]).

Panel data analysis has the capacity of specifying a balanced sample. A balanced sample includes data on all variables in the list that are available for all cross-sections in the same period. The balanced option performs case-wise exclusion of both variables and cross-sections. This will be very important for this study especially in dealing with non-traded securities either due to illiquidity, suspension or periods when the securities were not listed.

Before carrying out regression analysis, descriptive and inferential statistics were analyzed. Three simple linear regression models and two multiple regression model were developed. The study used five regression models as follows:

First the relationship between earnings and share prices was analyzed. In its testable form this relationship can be written as follows:

$$MPS_{it} = \alpha_i + \beta_1 EPS_{it} + \varepsilon \tag{1}$$

where:

α_i = the intercept

MPS_{it} = market price per share of company *i* at time *t*

EPS_{it} = Earnings per share of company *i* at time *t*

ε = the part of the price which is not interpreted by the model (residuals)

Next the relationship between dividends and share prices was analyzed. In its testable form this relationship can be written as follows:

$$MPS_{it} = \alpha_i + \beta_2 DPS_{it} + \varepsilon \tag{2}$$

where:

MPS_{it} = market price per share of company *i* at time *t*

DPS_{it} = dividend per share of company *i* at time *t*

Next the relationship between book values and share prices was analyzed. In its testable form this relationship can be written as follows:

$$MPS_{it} = \alpha_i + \beta_3 BVPS_{it} + \varepsilon \tag{3}$$

where:

MPS_{it} = market price per share of company *i* at time *t*

$BVPS_{it}$ = book value of equity per share of company *i* at time *t*

Next the relationship between earnings, book values and share prices was analyzed. In its testable form this relationship can be written as follows:

$$MPS_{it} = \alpha_i + \beta_1 EPS_{it} + \beta_3 BVPS_{it} + \varepsilon \tag{4}$$

where:
MPS_{it} = market price per share of company i at time t
EPS_{it} = Earnings per share of company i at time t
$BVPS_{it}$ = book value of equity per share of company i at time t

Finally the relationship between combined dividends, earnings and book values and share prices was analyzed. In its testable form this relationship can be written as follows:

$$MPS_{it} = \alpha_i + \beta_1 EPS_{it} + \beta_2 DPS_{it} + \beta_3 BVPS_{it} + \varepsilon \quad (5)$$

where:
MPS_{it} = market price per share of company i at time t
EPS_{it} = Earnings per share of company i at time t
DPS_{it} = dividend per share of company i at time t
$BVPS_{it}$ = book value of equity per share of company i at time t

4 Results and discussions

The results from the analysis are summarized in Table 1 below. The analyzed regression model showed that the EPS results are significant and positive for the firms listed at the NSE during the period of this study as EPS can explain approximately 32% of the variation in MPS. This indicates that earnings represent quite a significant variable in the determination of share prices. Therefore earnings per share should be given high consideration during the investor decision making process. The results are similar to Cheng, Liu, & Schaefer [20] who termed earnings as relevant though they vary from Glezakos, Mylonakis, & Kafuoros [28] who found that although the explanatory power of combined earnings and book values increases over time, earnings play a continually diminishing role in formulation of share prices.

The second objective was to analyze the relationship between book values and share prices. Results from the regression model indicate that BVPS can explain approximately 12% of the variation in the share prices of firms listed in the NSE during the period of the study. The BVPS results are significant and positive though not as high as the earnings and dividends results. The results of book value as a dependent variable indicate that it is the least important in determining share prices at the NSE during this period when ranked with earnings per share and dividends per share. The literature reviewed exhibits mixed empirical results. Bernard [9] found that book value can explain 68% of the changes in the equity market prices. Collins et al. [1] found that there was a shift in relevance from earnings to book value. Burgstahler & Dichev [14] found that earnings were becoming less value relevant while book value was increasing in significance. Gee-Jung [21] found that book value was the most relevant variable.

The third objective was to investigate whether dividends can explain share prices. The regression results indicate that DPS is positive and significant and can explain approximately 55% of the variation in the share prices. These DPS results are similar to findings from Bernard [9] who found that 29% of the changes in stock prices can be explained by dividends, and Pettit [10] who found that substantial information is conveyed by announcements of dividend changes.

Table 1: Summary results for the models

Independent Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**
	Overall for 2005 to 2010				
EPS	5.3324 (0.0000)	-	-	4.9283 (0.0000)	1.5230 (0.0000)
BVPS	-	0.2974 (0.0000)	-	0.0741 (0.1144)	0.0875 (0.0016)
DPS	-	-	16.5759 (0.0000)		14.0035 (0.0000)
R^2	0.3232	0.1209	0.5464	0.3289	0.5821
	Year 2005				
EPS	4.9197 (0.0037)			4.1223 (0.0241)	-1.6780 (0.3404)
BVPS		0.2586 (0.0732)		0.1321 (0.3089)	0.1452 (0.1615)
DPS			17.6640 (0.0000)		18.6624 (0.0000)
	Year 2006				
EPS	13.0811 (0.0037)			16.1699 (0.0000)	9.7676 (0.0000)
BVPS		0.3593 (0.0101)		0.2973 (0.0461)	-0.1723 (0.1574)
DPS			19.3361 (0.0000)		11.9246 (0.0000)
	Year 2007				
EPS	9.1191 (0.0000)			8.2684 (0.0000)	3.2947 (0.0555)
BVPS		0.4060 (0.0037)		0.2546 (0.0298)	0.3015 (0.0014)
DPS			14.7973 (0.0000)		10.8643 (0.0000)

Independent Variable	Model 1	Model 2	Model 3	Model 4	Model 5
	Year 2008				
EPS	5.7245 (0.0000)			5.3098 (0.0000)	2.1220 (0.0596)
BVPS		0.2968 (0.0073)		0.2400 (0.0082)	0.1997 (0.0062)
DPS			15.4147 (0.0000)		11.8139 (0.0000)
	Year 2009				
EPS	4.8009 (0.0000)			6.2092 (0.0000)	2.6054 (0.0418)
BVPS		0.1907 (0.0602)		-0.1821 (0.1062)	-0.1168 (0.1988)
DPS			14.7292 (0.0000)		11.6711 (0.0000)
	Year 2010				
EPS	4.3733 (0.0000)			4.1462 (0.0000)	1.9478 (0.0054)
BVPS		0.3388 (0.0001)		0.0428 (0.6342)	0.0159 (0.8249)
DPS			19.1204 (0.0000)		14.9201 (0.0000)

The fourth objective was to assess the combined effect of earnings and book values in explaining share prices for firms listed in the NSE during the period of the study. The regression results indicated that the joint EPS and BVPS variables were positive and significant and can explain approximately 32% of the variations in share prices during the period of the study. The findings are similar to Houthasen & Watts [18] found that both earnings and book values correlate the most with stock prices.

The fifth objective was to assess the combined effect of earnings, book values and dividends on share prices. The joint model of EPS, BVPS and DPS indicates that the three variables can explain approximately 58% of the movement in share prices. It is also important to note that all the three variables were statistically significant both as single variables and multiple variables in the regression model. This conforms to previous studies done in the developed markets that found all three variables to be significant in determining share prices. Pourheydari, Aflatoni, & Nikbakhat [25] in their study conducted in Iran found that there was a positive relationship between earnings, book values and dividends with market values in the Tehran stock exchange. Keener [27] also found that the combined significance of earnings and book value has not changed over time. Thus, it can also be concluded that the earnings per share, book value per share and dividend per share have information content and are therefore able to influence share prices at the NSE.

From the findings of the study, it can be concluded that there is a significantly positive relationship between share prices and earnings. This can be seen by the positive results exhibited when share prices are regressed together with earnings. This can usually be seen by the reaction of investors to positive earnings announcements by firms. When firms announce positive results Kenyan investors immediately rush to buy the same in anticipation of favourable dividend payouts at the close of books for dividend payments. It can also be concluded that there is a positive relationship between share prices and book values. However, this relationship is not as significant as the other variables. This could be due to the changing business environment and the fact that most companies are investing in information technology which are intangible investments and these are challenging in their inclusion in the book value of most firms. Social media has also led to an exponential growth of company sales and wider coverage.

It can also be concluded that there is a positive relationship between share prices and dividends. This relationship is quite significant according to the results in this study. Most Kenyan investors do and should assess a firm’s dividend payment in order to determine whether or not to invest in its shares. The investment in these firms has to be considerable in order to reap serious benefits as most firms in Kenya operate on a constant dividend payment year after year. For most of the individual investors who have access only to financial statement information, this is an important variable to analyze in the investment decision making process.

Overall, these results mean that the market price of a share is dependent on the amount of expected dividend per share, earnings per share and book value per share. Unlike other studies that found book value important in the determination of the share price, this study finds it to be of less significance.

The role played by investment advisers and stock brokerage firms is important in the expectations and decisions of investors in the stock market, however, the role played by the financial statement information cannot be overlooked. These findings are consistent with existing theoretical and empirical literature. More so, the results justify the leading role of the financial statement information in determining the level of participation in the stock market and thus the share prices of listed firms.

4.1 Recommendations

Based on the findings of the study, the study presents recommendations pertinent to the investors, financial market regulators and future researchers. The study adds to the existing knowledge on the importance of financial statement information in Kenya. It re-emphasizes the leading role of this information and specifically the three variables, earnings, book values and dividends in the investment decision making process in Kenya. This adds value to the individual investors many of who have only access to financial statement information in making investment decisions.

The study also sought to increase the level of knowledge and awareness of the importance of this vital document that most companies spend quite handsomely to print and avail to shareholders during the annual general meetings. The knowledge of exactly what to look for in the financial statements of the firm will help investors be able to make informed decisions as they can now focus more on the earnings, book values and dividends though these are certainly not the only variables to look at or consider.

It has been noted that disclosures by public or listed companies have not been done to the expected standards according to CMA reports. According to the results of this study, individual investors can place reliance on the financial statement information published by listed companies. Any company that violates the CMA disclosure procedure misleads investors and should therefore be held accountable for any losses incurred by the individual investor who relies on such reports. The current case of Goldman Sachs who have been accused of providing misleading information to investors leading to losses brings to the fore the seriousness of such irregularities.

In the past, certain audit reports have proved unreliable for investors as they were used to indicate favourable financial results yet the companies became bankrupt or were liquidated soon after release of the good financial reports. The CMA should ensure proper disclosure by companies so as to avoid a repeat of such scenarios.

The capital markets authority should put in place stringent measures to monitor stock market operators so as to avert any harmful practices. This is important in rebuilding investor confidence in the NSE especially after the recent collapse of several stock brokerage firms.

The CMA and NSE can also undertake rigorous training of the public on the importance of the two entities and how participation by both individuals and corporate investors can be of benefit to them. Investor awareness of the company fundamentals to look out for in order to ensure that the firm complies with all disclosures and has not engaged in earnings management should be a priority of both the CMA and the NSE. This will help in increasing investor knowledge thus participation while growing our securities market to the desired levels.

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