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ABSTRACT

The objective of the study was to establish the effect of earnings volatility on market value of listed firms at the Nairobi securities exchange market. This research adopted a cross-sectional correlation design. The population of this study composed of all companies listed at the Nairobi Securities Exchange. The study focused on thirty (30) companies that were consistently listed with all the data available in the NSE handbook between the years ended December 31, 2011 and December 31, 2015. This research used secondary data from published audited financial statement of the various companies and the NSE hand book. The data analysis then involved correlation analysis using a multiple linear regression model. From the findings, the study concluded that earnings volatility have positive effect on the market value of listed firms. It was also established that payout ratio have positive effect on the market value of firms. Based on the findings that earnings volatility and payout ratio have a positive effect on the value of listed firms, management of such firms should put in place mechanisms to deal with such variables to help create a positive signal to the stakeholders.

Key Words: Earnings Volatility, Market Value, Profitability

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INTRODUCTION

Earnings volatility is the variability over time in the reported earnings of a firm. It has the possibility of affecting the ability of current earnings in predicting future earnings (Yosra & Fawzi, 2015). It also means the probability that actual earnings will differ from the expected earnings due to certain macro and micro economic conditions (Wolfgang, 2003). Such conditions may include: inflation level, socio-political instability, firm policies and availability of capital to the firm. Earnings volatility therefore may subsequently affect the estimation of future value of a firm as well as its equity value. The main objective of firms is to maximize shareholders wealth and the general value of the firm. Wherever the earnings of the firm are variable and unpredictable, the objective of shareholder wealth maximization may be not achieved (Howells & Bain, 2007). The significance of earnings volatility is also based on the argument that such volatility can affect the discount rates or the expected cash flows (earnings) in valuation models. Beaver, Kettler and Scholes (1970) found out that the variance of the earnings-to-price ratio is the accounting variable that is most correlated with a firm's beta coefficient. Generally, the concern is that earnings volatility has an effect on cash flow volatility with high chances of forecast errors and it increases the likelihood of negative earnings surprises (Badrinath, Gay & Kale, 1989).

Market value is the value of a company according to the securities market calculated by multiplying a company's shares outstanding by its current market price (Al Zararee & Al-Azzawi, 2014). It is the current quoted price at which investors buy or sell a share of common stock at a given time. It therefore explains what investors are willing to pay for (Helfert 1996). Pandey (2005) argues that the value of the company is the total values of all its monetary securities. The money streams received by the required claims should add up to the entire cash flow that assets produce. The

market value can also be estimated using dividend valuation models where present value from an expected future stream of dividends is computed (Hanlon, Myers & Shevlin, 2003). Company's market value is useful to provide information about the company's performance in the past and its prospects in the future. The market value can be measured using the ratio of market value (Gitman, 2009). This provides assessment of how investors view the company's performance and their expectation of returns in future. The determinants of firm value can either be internal or external to the organization in line with the strategic plan of the company, the internal environment and the external environment of the company. Huselid et al. (2013) cite cash flow, effectiveness and productivity and market value as some of the determinants of a firm value. According to Shin-Ping and Hui-Ju (2011) shareholder's wealth, growth, dividend-payout, ratio and leverage are key determinants of firm value. Renee and Mehran (2005) on the other hand posit that determinants of firm value include market price, capital structure and dividend ratio.

There are a number of studies relevant in the understanding of the effect of earnings volatility on market value of firms. Apat (2014) studied the relationship between earnings volatility and dividend pay-out of firms quoted at the Nairobi securities exchange market. The study showed that there was a negative significant relationship between earnings volatility and dividend pay-out of firms quoted at the Nairobi Securities Exchange (NSE). It was also found that there were other variables significantly correlated with dividend pay-out. Kipronoh (2014) studied stock price response to earnings announcements at the Nairobi securities exchange market. The study gives evidence of significant abnormal price reaction around the earnings announcement periods suggesting that earnings announcements do contain relevant information. In a related study, Ayako and Wamalwa (2015) studied determinants of firm value in Kenya. At the

individual determinant level, the estimation results were mixed. While they could not reject the null hypotheses that assets, capital structure, cash flows, dividend ratio and intangible had no statistically significant individual effects on the firm value of the listed commercial banks, they rejected the null hypotheses and concluded that market capitalization had statistically significant individual effects on the firm value of the listed commercial banks.

In other studies, Rountree, Weston and Allayannis (2008) presented empirical evidence that cash-flow volatility is negatively valued by investors. The study found that that cash-flow volatility is significantly and negatively associated with firm value. Park and Cho (2016) on the other hand examined the relationship between earnings recognition practices and firms' information environment. They found out that as earnings timeliness increases, the market incorporates more firm-specific information into stock prices. In addition, as a firm's earnings become more volatile, such a firm's stock return reflects more market-wide variation relative to firm-specific information. Petrovic, Manson and Coakley (2012) also conducted an investigation on whether volatility improves UK earnings forecasts. The findings confirm the established in-sample result of an inverse volatility-earnings relation.

Theoretically, this study was guided by efficient market hypothesis, signaling theory and random walk theory. The main theory guiding this study was the efficient market hypothesis. It posits that market efficiency is a matter of degree, which describes how much information prices reflect and how quickly prices react and reach new equilibrium levels. A highly efficient market would therefore react quickly and completely when new earnings-related information becomes available (Fama, 1970). This implies that volatility of earnings would best be explained on the basis of whether the capital markets are efficient or not. The accepted view is that when information

arises, the news spreads very quickly and is incorporated into the prices of securities without delay. Thus, neither technical analysis nor even fundamental analysis would enable an investor to achieve returns greater than those that could be obtained by holding a randomly selected portfolio of individual stocks with comparable risk. This can therefore a good basis for understanding why earnings of listed firms would be volatile. The signaling theory by Lintner (1956) suggests the confidence of future earnings relies on not only the magnitude of expected futures earnings but also the volatility of the earnings. Finally, random walk theory provides that information released or to be released to the market will have an impact on the value of financial asset.

The companies listed at the NSE were sixty nine (69) in number grouped under thirteen (13) sectors namely; agriculture; automobiles and accessories; banking; commercials and services; construction and allied; energy and petroleum; insurance; investment; investment services; manufacturing and allied; telecommunications and technology; real estate investment trust and exchange traded fund. The volatility of earnings is a critical component of every organization more so the firms listed at the NSE market. The aspect of earnings volatility specifically becomes very crucial for a firm when deciding on its dividend payout, determination of future value, liquidity management and making investment decisions. The introduction of electronic trading at the NSE was meant among other reasons to reduce volatility of prices and subsequently earnings by listed firms. The argument is that a trading system that enhances efficiency in the price discovery process, provides liquidity at low costs, and has no excess volatility is more desirable for the development of the stock market (Bessembinder & Kaufman, 1997).

Research Problem

Earnings volatility has the capability to show the profitability and viability of a business venture. If

an investor is not certain of the dividends he will receive the next period, it gives an indication of volatile returns. This is because a firm that is able to make earnings constant year in year out is able to maintain a stream of dividends to its shareholders. This is a communication of value to the investors. Rountree, Weston and Allayannis (2008) posit that shareholders are better off if a firm maintains smooth cash flows. Equally, when a firm makes high earnings, it's able to issue out high dividends to shareholders while low earnings mean that low dividends will be issued out to shareholders. Shareholders who therefore invest for the sake of dividends would have different perspective of firm value depending on how volatile the earnings are.

In Kenya the stockholders have observed numerous quoted companies' earnings fluctuate significantly to the extent of some companies' share prices experiencing a downward trend. Some of those firms have faced financial problems forcing them to be suspended from transaction in the security market. The question of whether investors should rely on dividend payments or the market value of the firm as measured by the market price of shares as a business's viability analysis remains a worry of decision makers (Morara, 2015). The volatility of earnings is therefore a critical component of every organization more so the firms listed at the NSE market. This is due to the fact that there is more scrutiny of the financial statements of the listed firms.

There are a number of studies in the area of earnings volatility and market value of listed companies. The study by Yosra and Fawzi (2015) established the ability of earnings volatility to successfully predict future earnings. Petrovic, Manson and Coakley (2000) also found out that there is a relationship between volatility and earnings forecasts. Gord, Hamzehzadeh and Mahdi (2016) on the other hand found out that there is a direct relationship between net earnings

volatility, comprehensive earnings volatility and increasing comprehensive earnings volatility with market risk of companies. In Kenya, Kinyua (2011) found out that earnings volatility is one of the factors that influence the dividend payout of a firm though not significantly. Regarding market value of the companies, Ayako and Wamalwa (2015) found out that assets, capital structure, cash flow, dividend payout ratio, intangible assets and market capitalization determine market value of companies.

The aforementioned studies shows that no study has been conducted in Kenya regarding whether earnings volatility affects market value of companies listed on the Nairobi securities exchange market. The market situation in Kenya is significantly different arising from differences in economic growth, investment culture and the level of growth of the Nairobi Securities exchange market as well as other factors affecting earnings of firms. The current study was therefore meant to close this study gap by answering the question. 'What is the effect of earnings volatility on market value of listed firms at the Nairobi securities exchange market?'

THEORETICAL LITERATURE

Efficient Market Hypothesis

The theory was developed by Fama (1970). It is of the view that at any point in time, the prices of securities are a reflection of the current market status based on the available information in the market. An investor therefore cannot earn arbitrage profits by using this information. The tenet of the theory is based on why prices change in the market and how the change takes place. According to Fama (1970) any new information is immediately reflected in the market prices of securities. Generally, efficient markets are deemed to have characteristics of perfect (Samuelson, 1965). According to Reilly & Brown (2007) a perfect market has a big number of profit maximizing investors who engage in the analysis and valuation of securities without relying on any

other factors. Such a market also is based on the belief that there is randomness in the way new information regarding securities is received in the market. The third assumption is that investors who are profit maximizers always manipulate the prices of securities as a reaction to new information. Several studies done especially in developed markets shows mixed reaction of stock behavior around earnings announcements. Aga and Kocaman (2008) argued that markets reacts positively to high earnings announcements and negatively to low earnings announcements. The release of new economic data signifies change of stock returns (Gakuru, 2004). The expectation of information released by investors leads to anticipation of a higher level of volatility on the day the news are released, investors process the newly received information thus leading to rise in market volatility after the announcement day (DeGoeji & Leuven 2002). However, Bernard and Thomas (1990) argued that stock prices do not fully reflect the adjustments of current earnings to project future earnings and prices partially reflect a naive earnings expectation.

Signaling Theory

Ross (1977) developed the signaling theory based upon the problems of the asymmetrical information between managers and investors. These models are based upon the idea that the top executives of the firm that have inner information, have a motive to transfer this knowledge to the external investors, so that the stock price will rise. However, managers cannot simply announce the good news to the investors, since they will face it with suspicion. The signaling theory assumes that firms with higher performance use financial information as a tool to transmit signals to the market (Rouf, 2015). The essence of signaling theory is that strong form EMH does not hold and insiders in a firm have information the market and outside investors do not have. It assumes that information is not equally available to all parties at the same time and thus there exists information asymmetry. The

signaling model by Lintner (1956) suggests that dividend payments depend largely on stable and sustainable earnings and firms would change their dividend policy in response to changes in the predictability of future earnings. The confidence of future earnings relies on not only the magnitude of expected futures earnings but also the volatility of the earnings. The theory therefore suggests that income smoothing can be used to convey information about a firm's future earnings prospects. Earnings volatility therefore contains incremental information that improves the prediction of future firm performance (Hamzavi and Aflatooni, 2011). One important implication of the theory is that the volatility of earnings could factor into the speed of adjustment (Fama & Babiak, 1968).

Random Walk Theory

The concept of random walk was first developed by Bachelier (1900). He found that a successive price change between two periods is independent with zero mean and variance depends upon interval between two periods. The early studies on testing the weak form efficiency on the developed stock markets, generally agree with the support of weak-efficiency of the market considering a low degree of serial correlation (Fama, 1970). Porterba and Summers (1988) confirmed the presence of mean reverting tendency and absence of random walk in the U.S. Stocks. Lo and McKinney (1999) proposed variance ratio test to test random walk hypothesis. Their findings provided the evidence against random walk hypothesis for the entire sample period of 1962 to 1985. Fama and French (1988) discovered that forty percentage of variation of longer holding period returns were predictable from the information on past returns for U.S. Stock markets. Stock prices follow a random walk which is connected to that of the efficient market hypothesis. The fundamental analysis approach to firm valuation posits that at any point in time, an individual security has an intrinsic value which depends in turn on such

fundamental factors as quality of management, state of the firm's industry and returns, rate of return on equity and the general economic outlook. Changes in the values of these variables result in changes in share values which change follow any definite pattern (an outcome of random walk behaviour).

RESEARCH METHODOLOGY

This research adopted a cross-sectional correlation design. Correlation study involves collecting and analyzing data in order to determine whether a relationship exists between two or more quantifiable variables and the strength of the relationship. The population of this study composed of all companies listed at the Nairobi Securities Exchange. The population of all the listed companies as at July 31, 2017, stood at 69 (NSE, 2018). The study focused on all the companies listed consistently the years ended December 31, 2011 and December 31, 2015. Based on data availability and consistent listing of firms, only thirty (30) firms were considered for the study. Some companies were listed towards the end of the study period while others did not have their complete data published to facilitate the study.

This research used secondary data. Data was collected on the number of shares outstanding and closing share price per day to compute the market value of the companies. These figures were obtained from the published financial statements of companies, specifically the income statements and the statements of financial position as well as the NSE data. To collect data on earnings volatility, earnings of a company was obtained through the published income statements of companies.

Based on data collected, the market value of each company was computed for the five years of study, then based on earnings, a standard deviation was computed for each of the studied companies. The data analysis then involved

correlation analysis using a multiple linear regression model. Data analysis was done using SPSS to run the regression model. The regression model is of the form:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Market Value (Dependent variable).

a = Constant

β_1 , β_2 and β_3 = Coefficient of Independent variables

X_1 = Earnings Volatility

X_2 = Payout ratio

X_3 = Firm Size

X_4 = Profitability

ε = Error term.

The direction and strength of the relationship was determined by the multiple correlation coefficient (r). The coefficient of multiple determination (r^2) was used to determine the explanatory power of the regression model. Analysis of variance (ANOVA) table from SPSS regression output was then used to determine the significance of the model using the F-statistic at 0.01 significance level. The t statistic was also determined to give the impact of each predictor variable.

RESULTS

Descriptive Statistics

The data that was extracted from NSE annual handbook for the period 2011-2015 for the companies under study. The data was extracted on the basis of the variables being studied including market value, earnings volatility, firm size, profitability and leverage of the company.

The table 1 showed the mean results and the standard deviation for the data of total firms' market value, earnings volatility, firm size, profitability and payout ratio for the five years period under review. The payout ratio had the highest mean of 33.0505 followed by market value with the mean of 24.2548. Profitability had the lowest mean of 7.9119. This implied that the payout ratio had a single value that represented the center of the data. Payout ratio however had

the highest standard deviation of 30.49959 followed by profitability with a standard deviation of 6.28923 and market value with the lowest standard deviation of 1.17331. These findings

implied that payout ratio of many companies had large variations. A descriptive analysis of the data was given in table 1 below:

Table 1: Descriptive Statistics

Variable	Mean	Std. Deviation
Market Value	24.2548	1.17331
Earnings Volatility	13.7168	1.35960
Firm Size	17.6061	1.74002
Profitability	7.9119	6.28923
Payout Ratio	33.0505	30.49959

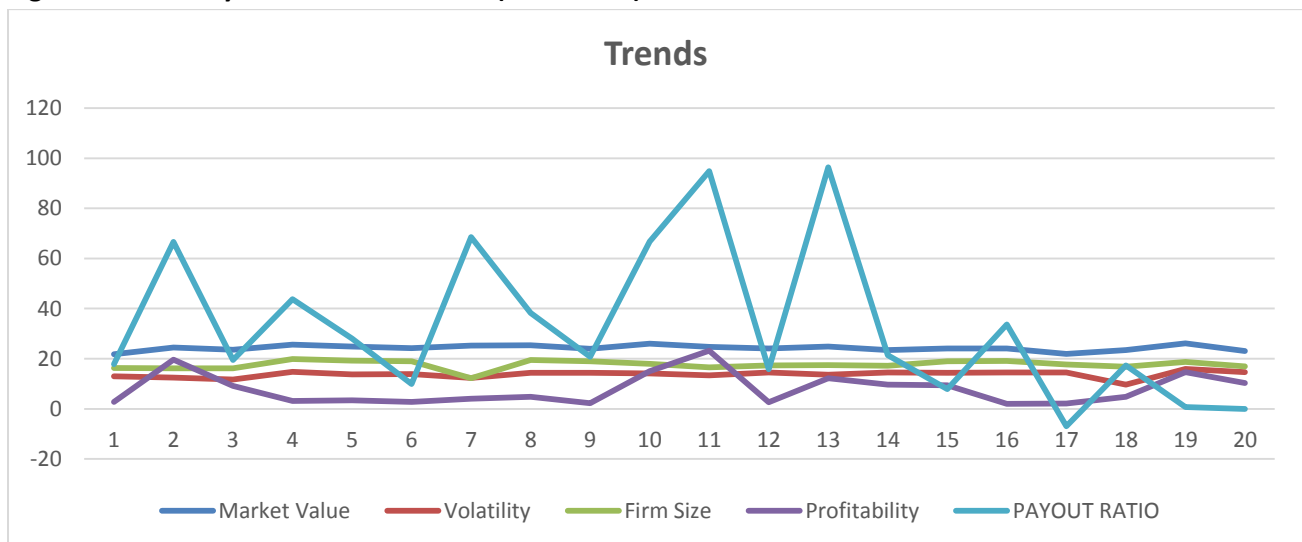
Source: Research Data (2018)

Market Value, Earnings Volatility, Firm Size, Profitability and Payout Ratio Trends

Based on data extracted from the NSE handbook, natural logarithm was used to normalize the data

for large values and then a summary of trends was developed regarding the variables under study as given in the table 1:

Figure 1: Summary of the Market Trend (2011-2015)



Payout ratio showed high variations throughout the period 2011-2015. To explain the findings of the study, the model summary, ANOVA and coefficients were presented as follows:

Regression Analysis

To establish the effect of earnings volatility on market value of companies listed on the Nairobi securities exchange market, a multiple regression was used. From the regression analysis, the

direction and strength of the relationship was determined by the multiple correlation coefficient (r) while Analysis of variance (ANOVA) table from SPSS regression output was then used to determine the significance of the model using the F-statistic at 0.01 significance level. The t statistic was also determined to give the impact of each predictor variable. The regression analysis results were as given in the tables 2 and 3 below:

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.638 ^a	.407	.249	1.01692

a. Predictors: (Constant), Payout, Volatility, Profitability, Firm Size

b. Dependent Variable: Market Value

From the table 2 above, the adjusted R² means that 24.9% of the variations in market value can be explained by variations earnings volatility, firm size, profitability and payout ratio. The standard

error of the estimate was <2.5 hence the regression line was an accurate predictor of the relationship between the variables.

Table 3: Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	10.644	4	2.661	2.573	.041 ^b
Residual	15.512	15	1.034		
Total	26.156	19			

a. **Dependent Variable:** Market Value

b. **Predictors:** (Constant), Payout, Volatility, Profitability, Firm Size

The table 3 above showed the F value of 2.573 which was significant with. The model was therefore statistically significant.

Table 4: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	17.575	2.899		6.061	.000		
Earnings Volatility	.191	.210	.221	.911	.377	.670	1.493
Firm Size	.183	.166	.271	1.097	.290	.650	1.539
Profitability	.017	.044	.094	.394	.699	.699	1.431
Payout Ratio	.021	.009	.557	2.284	.037	.665	1.503

a. Dependent Variable: MARKETVALUE

From the table 4 the following regression equation was established

$$Y = 17.575 + 0.191X_1 + 0.021X_2 + 0.183X_3 + 0.017X_4$$

From the equation the study found that holding earnings volatility and payout ratio constant,

market value index (dependent) would be 17.575. It further indicated that a unit change in the earnings volatility causes a 19.1% change in the market value of listed companies while a unit change in payout ratio, firm size and profitability causes 2.1%, 18.3% and 1.7% respectively. The

relationship between market and payout ratio is significant while that of market value and earnings volatility, firm size and profitability is not significant. The VIF data suggested that collinearity is not a problem as the figures were well below 10.0 for each variable.

SUMMARY OF FINDINGS

The objective of this study was to establish the effect of earnings volatility on market value of listed firms at the Nairobi securities exchange market. Secondary data was collected from the NSE handbook and from the published financial statements of the various companies. The study used payout ratio as the control variable. The study established that earnings volatility and payout ratio have a positive effect on the value of the firm. It was established that 24.9% of the variations in market value can be explained by variations in earnings volatility and payout ratio. It was also established that the regression model is significant in explaining effect of earnings volatility on market value of listed firms at the Nairobi securities exchange market. The study results showed that there is a positive relationship between the earnings volatility and market value.

CONCLUSION OF THE STUDY

The objective of the study was to establish the effect of earnings volatility on market value of listed firms at the Nairobi securities exchange market. From the findings, the study concludes that earnings volatility have positive effect on the market value of listed firms. It is also established the controlling variable of payout ratio positive effect on the market value of firms. The

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relationship between payout ratio and market value is however not significant.

RECOMMENDATIONS

Based on the findings, earnings volatility and payout ratio have a positive effect on the value of listed firms. The effect is however not significant hence the need to find out the other factors that affect the value of the firm. The study therefore recommended that to reduce earnings volatility hence achieve stable earnings forecast, companies management should focus on other variables and activities such as the need to increase sales revenue and reduce operational expenses. Regarding payout ratio, the company should have a clear dividend policy and consider other factors such as liquidity, growth opportunities and current ratio since they have an impact on the value of the firm.

Suggestions for further Research

The research study covered only five years between 2011 and 2015. Further research can be done on similar study for an extended period of time to ensure that more information is gathered to adequately find the relationship between the two variables under research. Firms that are not listed under the NSE market should also be researched on in regards to earning volatility and market value in order to also understand the relationship between the two variables among firms not listed on the NSE market. The same study can also be expanded by extracting data for all the sixty nine (69) listed companies to confirm any variations in results. Additionally, other control variables can be considered for future studies to explain the variations.

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