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EFFECT OF PRICE EARNINGS RATIO ON SHARE PRICE VOLATILITY OF FIRMS LISTED ON NAIROBI SECURITIES EXCHANGE

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ABSTRACT

The objective of the study was to determine the effect of price earnings ratio on share price volatility of firms listed on the Nairobi Securities Exchange in Kenya. The target population in this study comprised all the firms listed on the Nairobi Securities Exchange. The study sampled firms that had been continuously paying dividends for the study period. This period was important in the sense that it conformed to the coming of devolution which marked a change in the governance structure of Kenya and also presented alternative investment opportunities in the counties. A correlation research design was adopted where secondary data was collected using data collection sheets and analysed using inferential statistics of correlation and regression model. The descriptive statistics analysis entailed Minimum, Maximum, Mean and standard deviation. The findings showed price earnings ratio to be a significant cause for share price volatility of firms listed at the Nairobi Securities Exchange. The study precisely pointed out a significant positive effect of dividend per share and price earnings ratio on share price volatility of firms listed on NSE. The study recommended a robust rationing of earnings between retention and dividend payment.

Key Words: *Price Earnings Ratio, Share Price Volatility*

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INTRODUCTION

The payment of dividend dates back to over the centuries ago. Initially as it happened in Holland and Great Britain, dividend was paid out of the capital contributed by joint stock company shareholders and profits generated by the joint stock venture. The shareholders could either regroup for another venture by raising new capital, or walk different ways altogether (Baskin, 1988). From 1661 however, dividends were exclusively paid out profits at the rate of 20% of undistributed capital. This led to the establishment of permanently capitalised joint stock companies (Williston, 1888a) and ensured that joint ventures became going concerns with perpetual existence (Frankfurter & Wood, 2002).

Shareholders of a company take are interested in the dividend policy of a company because it affects one of their cardinal objectives which are wealth maximization. In view of this, the management of a company will always have to strike a balance between pay ratio and retention ratio (Khan, Aamir, Qayyum, Nasir, & Khan, 2011). In addition to payout ratio, shareholders also concern themselves with the decision by the company to make cash or non-cash distribution of dividend. According to Schwartzman and Ball (1984), a company that distributes stock dividend sends a signal of a liquidity shortage problem. Despite several studies on the subject of dividend policy, it still remains one of the most pertinent issues that stands unresolved in corporate finance (Brealey & Myers, 2005).

Dividend decisions are complex in nature and their choice should be weighed against interests of the various stakeholders of the firm. It is this complexity that calls for further research beyond the variables of payout ratios and firm size (Otieno, 2016), cash policy and dividend policy (Mogere, 2016). The latter in recognition of there being other possible aspects of dividend policy that affect share price volatility recommended further research in this area to determine the effect of these other variables which have been adopted in this study. This research therefore, is a continuation of prior studies on the subject. This study sought to establish the effect price earnings ratio on share price volatility of NSE listed firms.

Securities are investments which represent proof of debt ownership of a business or the legal right to acquire or sell an ownership interest in a business. The most common securities in Kenya are stocks, bonds and options. These investment options are traded in security markets, which are mechanisms that link suppliers to demanders of financial resources for transaction purposes at a fair price and in a timely manner (NSE, 2007).

In Kenya, the transaction of securities takes place at the Nairobi Securities Exchange which was established in 1954 as a voluntary organization of stock brokers. The bourse has since developed to become the first in East Africa to be granted full membership admission at the World Federation of Stock Exchanges. To ensure fair play at the securities exchange, the Capital Markets Authority has been tasked with the critical regulatory role through licensing and approval (or disapproval) of public offers and listings of securities traded at the NSE. Firms listed at the NSE are categorized into Agricultural, Automobile and Accessories, Banking, Commercial and Service, Construction and Allied, Energy and Petroleum, and Telecommunications and Technology.

Statement of the Problem

Share price volatility is a measure of risk in the stock market and as such, its effect on the performance of stock markets and by extension the financial system cannot be ignored. High volatility beyond certain levels may occasion losses to investors and put to question the robustness of the financial markets and overall economic conditions (Pryymachenko, 2003). If unchecked, volatility in financial markets can pose a threat to the stability of the financial sector and the whole economy (Rubiyanto et. al, 2017).Therefore, research in these area is important to not just financial economists, financial practitioners but to government treasury and regulatory agencies as well (Bhowmik & Wang, 2020).

Stock markets experienced unprecedented fluctuations in the post 2007/08 global financial crisis which increased uncertainty and risk levels (Mouton & Smith, 2016). Kenya's Nairobi Securities Exchange was ranked as the worst performing market in the region in 2017. This was attributed to a wait-and-see attitude by investors amid persistent volatility as a result of to the two presidential elections in the same year (Central Bank of Kenya, 2017). Consequently, most investors at the market shunned stocks for relatively safer government paper. Given the importance of stock markets in the global economy, Bhowmik and Wang (2020) underscore the need for accurate measurement of this volatility in stock returns. This will assist managers to adopt appropriate dividend policies which enhance the value of their companies (Ndungu, 2016), and also inform strategic actions by players and intervention measures by regulators in the stock markets and financial sector at large.

There exist studies that have examined the nexus between price earning ration and share price volatility. However, these studies are not conclusive in themselves for the various. A study by Gabow (2017) did not include price earnings ratio and one of the independent variables. Price earnings ratio has also not been accorded sufficient attention by previous studies, which informed their inclusion in this study. The findings of this study become a more precise reflection of the market compared to the foregoing cases.

Research Objective

The objective of the study was to determine price earnings ratio on share price volatility for firms listed on Nairobi Securities Exchange.

The study sought to test the following hypothesis;

- H_0 Price Earnings ratio has no significant influence on share price volatility of firms listed on Nairobi Securities Exchange.

LITERATURE REVIEW

The Bird in the hand theory

The theory by Lintner (1956) was also supported by Gordon's (1963) growth model. It theory postulates that a rational investor would prefer current dividends (bird in hand) to future capital gains (two in the bush) due to the circumstances of information asymmetry and uncertainty related to future and capital gains. The fact that current dividend is decided by managers makes it more certain and predictable that capital gains which is determined the influence of market forces on stock price (Keown, Martin, Petty & Scott, 2007; Gordon, 1963). The underlying assumptions of this theory is that all investments by the firm are internally financed by retained earnings, the internal rate of return, cost of capital and retention ratio are constant, and that the company has an eternal life.

Gordon (2003) content that investors are generally apprehensive about future capital gains and dividends due to the high level of uncertainty associated with future income streams. This means the more distant the future is, the higher the uncertainty regarding future dividends and capital gains. That is, the length of time and the level of risk are correlated (Gordon, 1963). In these circumstances, an investor would be willing to pay a higher price for firms that pay current dividends. This is unlike companies which do not pay current dividends where an investor would use a higher discount rate in order to discount earnings, which makes the value of such companies lower than that of their counterparts who pay current dividends (Khan& Jain, 2008). Therefore, an increase in retained earnings of a company has an effect of increasing the discount rate which lowers the value of the firm, and reverse is also true for firms with lower retained earnings for payment of current dividends.

This is a marked departure from Miller and Modigliani (1961) in their irrelevancy model which assumed that dividend policy doesn't affect the cost of capital. They argue that a firms risk (and therefore investors required rate of return,) is a function of its investment and financing decisions, and not its dividend policy. Given the investors

indifference between dividends and capital gains shareholders, which is not always the case according to Davis and Pinches (1997),reinvest their dividends in shares of the same company or other companies with a similar risk, depending on term to maturity (Goncalves, 2017)

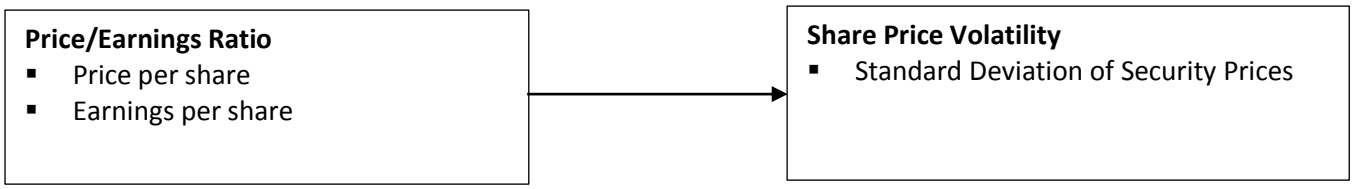

Figure 1: Conceptual Framework

Price Earnings Ratio

This is a ratio for company valuation whereby its present share price is measured relative to its earnings per share (EPS) (Nicholson, 1960). This ratio is one of the most commonly used indicators of the stock market performance. It shows at the current share price and level of earnings, the number of years it would take for the earnings from the share to cover price of the share. Price earnings ratio of a company will influence its share price in the sense that if a company has been having a considerable price earnings ratio consistently, its shares become attractive to potential investors raising the share price through increased demand. A low price earnings ratio implies a shorter payback period, which is desired by rational investors (Ouso & Mutava, 2018).

Gautman (2017) examined impact of firm specific variables on stock price volatility and stock returns of Nepalese commercial banks for the period ranging from 2008/09 to 2015/16. The variables in this research were leverage rate, capitalization, and growth of assets, price earnings ratio and book to market value. The population comprised of 28 commercial banks from which a sample of 20 was selected. Descriptive and causal comparative research designs applied in the study showed that price earnings ratio was negatively related to stock price volatility. Thus the higher the PE ratio, the lower the share price volatility.

Auma (2014) examined the relationship between price earnings ratio and stock returns of companies listed at the Nairobi Securities Exchange. The study used price earnings ratio, market to book value ratio and firm size measured by total assets. The population consisted 61 companies in Nairobi Securities Exchange as at 31st December, 2013. Data on stock prices, ordinary share earnings, number of issued common stocks and dividends was collected and analysed using regression and correlation analysis. The findings showed significant positive relationship between price earnings ratio and stock returns for firms studied. It was concluded from the study that firms with lower reinvestment should comparatively have higher P/E ratio which signifies high expectations. This makes companies with high P/E ratio more risky than those with low price earnings ratio. Thus the latter are more preferred by investors than the initial, a phenomenon likely to be reflected in their respective share prices.

Murira, Baimwera and Munene (2017) investigated the relationship between share returns and share prices for stocks listed on the Nairobi Securities Exchange between 2010 and 2014. PE ratio, earnings per share, dividend per share and retained earnings were independent variables in this study. The findings indicated that price earnings ratio had a positive but weak correlation with market price per share, implying that it did not significantly determine share prices at the NSE for the period under research. The study recommended further research to compare the connection between share returns and market price for shares for regulated and non-regulated firms.

Said and Kaplelach (2019) studied the relationship between firm performance and market value of firms at the Nairobi Securities Exchange. They specifically sought to establish the relationship between price earnings ratio, payout ratio and earnings per share, and market value of companies listed at the NSE from 2013 to 2017. The population was sixty five firms listed at the NSE across the study period. Multiple linear regression model was used to analyse relationship. Price earnings ratio had a positive and significant impact on value of the firm. The recommendation was that investors can use the PE ratio to make investment decisions. The study also recommended further research on this subject to consider moderating effects of firm size, managerial competency and leverage levels.

Share Price Volatility

Share price volatility refers to a phenomenon where share prices deviate in index upward or downward from the average level. These upward and downward price movements are termed as bullish and bearish trends respectively (Roll, 1983; Irfan & Nishat, 2003). Such fluctuations are brought about by business fundamentals which could be economic or political. Stock price volatility is measured by annualised standard deviation of daily price changes of the stocks. Stocks whose prices oscillate rapidly over short timeframes as highly volatile, while those whose prices change slightly are less volatile stocks (Ngugi, 2017). Investors take a keen interest in volatility of stock prices since this is taken as a proxy for (un)certainty about future returns generated by the stock.

Henry, Harjun, Wisnu and Robiyanto (2018) examined stock price volatility determinants in the Indonesian Manufacturing sector for the period between 2011 and 2015. The study particularly looked at influence of return on equity, debt to equity ratio, sales growth, firm size, cash ratio of firms, and dividend pay-out ratio on stock price volatility for a population of eight manufacturing firms on the Indonesian Stock Exchange. The results showed that 4.48% of recorded stock price volatility was explained by return on equity, cash ratio, debt to equity ratio, dividend payout ratio, company size, and sales growth. The remaining 95.16% was explained by variables not considered in this research.

Pirzada (2017) conducted a research on the impact of dividend policy on stock price volatility in the financial sector of Malaysia between 2001 and 2009. The study sought to find out influence of dividend policy to changes of share prices in the financial sector. Dividend payout, dividend yield and the effect of the relationship between the two on share price volatility was examined. The results found the relationship between dividend yield and dividend payout ratio and share price volatility in the financial sector to be insignificant. This study in effect illuminated the pathway to unravel what exactly moves stock prices. While blaming insufficient data collected on the subject, the study recommended a longer time horizon of up to 20 years.

Okonkwo and Jude (2019) explored the causal connection between stock gains volatility and selected macroeconomic variables in the Nigerian Stock Exchange from 1981 to 2018. The study used industrial production and exchange rates as variables, whose effect on stock gains volatility was analysed using Johansen co integration and Granger Causality impact assessment tests. The results revealed a causal relationship between stock return volatility and selected macroeconomic variables in the long run. By augmenting the selection of variables beyond the microstructure of the stock market and considering a longer time horizon of 37 years, Okonkwo and Jude (2019) seem to have cured the inadequacies of a shorter term period in the research by Pirzada (2017) who had recommended consideration of variables beyond the scope of his study.

Onyango (2018) investigated the influence of exchange rate volatility on stock prices of companies listed on Nairobi Securities Exchange from 2007 to 2014. All the 61 companies on the NSE were studied. The results showed presence of significant negative relationship between exchange

rate volatility and stock prices. Wafula (2016) studied the effect of share price volatility on stock market performance at the NSE. Twenty companies on NSEs 20 share index for a 10 year period from 2006 to 2015 were targeted in the study. It was demonstrated in the study findings therein that share price volatility and interest rates negatively affect stock market performance, and money supply had a positive impact.

Garang (2019) studied the relationship between earnings announcements and stock prices at the Nairobi Securities Exchange. Interim and annual earnings announcements for 64 companies listed at the NSE from 2012 to 2016 were used. It was empirically evident from the study that both interim and final dividend announcements significantly affected stock prices. The study concluded that the dividend announcements contain relevant information which serves as signal that manifests itself in price changes of stocks.

Empirical Review

According to Tease (1993), stock markets play a crucial role in the allocation of resources through provision of funds and determination of firm value and borrowing capacity. However, a growing body of literature has cast doubts in the appropriateness of these markets reflecting all the available information. Information on the share price volatility which points to stock markets efficiency may help regulators to come up with policies to reduce economic distortions through efficient and effective resource allocation (Shahzad, Naveed, & Khamis, 2018).

A number of studies have focused on aspects of dividend policy and share price volatility. Al-Shawawreh (2014), examined the relationship between dividend policy and share price volatility on 77 industrial firms listed on the Amman stock exchange for twelve years. Results of descriptive and correlation analysis showed a significant negative effect of dividend payout and dividend yield on share price volatility. Contrary, in a study of the relationship between dividend policy and share price volatility on 53 firm on the same stock exchange for 13 years, Al-Shawawreh (2014) found the effect of dividend yield to weak and positive. Therefore firms can use dividend policy to control stock price volatility (Dewasiri & Banda, 2015).

Pelcher (2019) studied the effect of dividend policy on share price volatility for forty firms on Johannesburg Stock Exchange for a five year period. Results of the panel data analysis revealed that dividend had an association with stock price volatility. The study observed that managers of dividend paying companies can manipulate dividend policy to smooth out share price volatility. Mouton and Smith (2016) observed that the sustainable wealth creation is one of the key objectives of a company which can be archived through maximization of earnings and minimization of risk.

Ndungu (2016) studied the role of dividend policy on share prices for companies listed in the Nairobi Securities exchange. This study specifically considered the effect of dividend policy on share prices for companies listed on NSE. A sample of 30 firms was studied using linear regression and regression analysis. The study found out a positive and significant relationship between dividend policy and share prices. Share prices are particularly more sensitive to prior to the announcement of dividend due to investors desire to dispose nonperforming stocks (Liyambula, 2014). This behaviour varies in consistency from one market sector to another (Faloye & Oluwole, 2014).

METHODOLOGY

A correlational research design was used to investigate and analyse the influence of price earnings ratio on share price volatility of companies listed on the Nairobi Securities Exchange. The target population comprised of all firms quoted on Nairobi Securities Exchange as at 31stDecember, 2018. This stood at 64 firms. Purposive sampling technique was used, where firms which had complete data for the 5 year period from 2011 to 2018 formed the sample. This study intended to use secondary data which was the information collected by parties not

involved in this research, and that which had gone through certain processing prior to its use in this study. Secondary data on share prices of firms listed on the Nairobi Securities Exchange (NSE) between 2011 and 2018 was collected from NSE and financial statements for respective companies. Correlation analysis was used to determine relationship between the independent variable with the dependent variable.

FINDINGS

Influence of Price to earnings ratio on share price volatility of firms listed on Nairobi Securities Exchange

The study sought to identify the influence of price earnings ratio on volatility of share prices for firms listed on Nairobi Securities Exchange. The null hypothesis denoted, **H_0:** Price earnings ratio has no significant influence on share price volatility of firms listed on Nairobi Securities Exchange. Table 1 contained the findings.

Table 1: Regression Random Effect of Price earnings ratio on Price Volatility

Random-effects GLS regression				Number of obs =		190
Group variable: FIRM				Number of groups =		38
R-sq:				Obs per group:		
within = 0.3179				min =		5
between = 0.611				avg =		5
overall = 0.3519				max =		5
				Wald chi2(2) =		88.5
corr(u_i, X) = 0 (assumed)				Prob > chi2 =		0.000
PVOL	**Coef.**	**Std. Err.**	**Z**	**P>z**	**[95% Conf. Interval]**	
PER	0.003901	0.000415	9.41	0	0.003088	0.004714
_cons	11.81643	2.067745	5.71	0	7.763725	15.86914
sigma_u	10.36677					
sigma_e	13.29139					
Rho	0.378241	(fraction of variance due to u_i)				

The result obtained from random effect model indicated that price earnings ratio accounted for 35.19% (Overall R square=0.3519) of the variation in share price volatility of firms listed on Nairobi Securities Exchange. The findings showed Wald chi-square = 88.5 with a corresponding p-value =0.000. The partial regression coefficient for price earnings ratio was 0.003901 showing that an increase of one percent in price earnings ratio across time and listed firms makes share price volatility to increase by 0.003901 per cent. The regression model was as shown below

$$SPV_{it}=11.81643+0.003901PER$$

The study therefore failed to reject the null hypothesis implying that price earnings ratio has significant impact on share price volatility of firms listed on Nairobi Securities Exchange. This implied that increase in price earnings ratio would to significant increase in share price volatility of firms listed on Nairobi Securities Exchange. The results agreed with Auma (2014) which examined the relationship between price earnings ratio and stock returns of companies listed at the Nairobi Securities Exchange. The findings showed a significant positive relationship between price earnings ratio and stock returns for firms studied. Gautman (2017) also showed that price earnings ratio was negatively related to stock price volatility. What this means is that the higher the PE ratio, the lower would be the share price volatility

CONCLUSIONS AND RECOMMENDATIONS

The objective of the study was to determine the effect of price earnings ratio on share price volatility of firms listed on Nairobi Securities Exchange. Panel data Pearson correlation results indicated a significant positive relationship between price earnings ratio and share price volatility of firms listed on Nairobi securities exchange. Random effect linear regression analysis indicated that price earnings ratio significantly accounts for variation in share price volatility of firms listed on Nairobi securities exchange. Random effect multiple regression analysis revealed that when other variables are controlled in the model, a unit change in price earnings ratio would results to a significant change in the share price volatility of firms listed on Nairobi securities exchange in the same direction. Thus, price earnings ratio is a significant predicator of share price volatility of firms listed on Nairobi securities exchange. Therefore, the third null hypothesis was rejected.

It was concluded from data analysis that price earnings ratio has significant positive effect on share price volatility of Nairobi securities exchange listed firms as indicated by correlation and linear regression analysis. A positive in price earnings ratio would result to a significant positive change in the share price volatility of firms listed on Nairobi securities exchange. Therefore, price earnings ratio comes out as a significant predicator of share price volatility for firms on the Nairobi securities exchange.

The study recommended for a robust rationing of earnings between retention and dividend payment.

Suggestion for Further Studies

This study examined the influence of price earnings ratio on share prices volatility for firms listed at the NSE. It was recommended that further research could be conducted to establish whether macroeconomic variables affect share price volatility for firms listed in the NSE. This was informed by the low explanatory ability of independent variable in this research of changes in the dependent variable. Finally, further studies could consider separation of interim dividends and final dividends and also select firms with similar year ends.

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