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Dividend Policy and Share Price Volatility in Kenya

Nkobe D. Kenyoru[1*] Simiyu A. Kundu[2] Limo P. Kibiwott[3]

1. Assistant Lecturer, Department of Accounting and Finance, School of Business and Economics, Moi University, P.O. Box 1602 – 30100, Eldoret.
2. Lecturer, Department of Accounting and Finance, School of Business and Economics Moi University, P.O. Box 1602 – 30100, Eldoret.
3. Assistant lecturer, Department of Marketing and Management Science, School of Business and Economics, Moi University, P.O. Box 1602 – 30100, Eldoret.

* E-mail of the corresponding author: nkobekenyoru@gmail.com

Abstract
This paper seeks to determine the impact of dividend policy on share price volatility in Kenya. A number of theoretical mechanisms have been suggested that dividend policy vary inversely with share price volatility like the duration effect. The study used data from the actively trading companies listed in the Nairobi Securities Exchange for a period of ten (10) years from 1999 – 2008. The estimation is based on multiple regression analysis between dividend policy measures (dividend payout ratio and dividend yield) and Share price volatility. From the regression results showed dividend is the major determinants of share price volatility in NSE (β =-0.470, ρ<0.05). Dividend yield negatively positively affect share price volatility (β =0.124, ρ<0.05). Thus, the higher the payout ratio the less the share price volatility, and the higher the dividend yield the lower the share price volatility.
Keywords*:* share price volatility, dividend payout, dividend yield, Nairobi Stock Exchange

1. Introduction

Today, Dividend policy has gone beyond the scope of addressing the frequency of paying its shareholders a cash dividend or to retain its earnings (whether annually, semiannually or quarterly), to include such issues as whether to distribute cash via share repurchase or through specially-designated rather than regular dividends. Dividends policy also consider how to balance the preferences of highly taxed and relatively untaxed investors, how to maintain, and improve, the value of its shares and stocks in the market(Okafor *et al*,2012).

Setting dividend payouts in relation to long-term growth opportunities maximizes financial flexibility and reduces the financial frictions associated with raising external capital. Hence, a rapidly growing firm, with an abundance of positive net present value projects, should retain a larger share of its operating cash flow than a firm with few profitable investment opportunities (Okafor and Mgbame, 2012). This , unaccompanied change in the real situation, may lead to a general erosion of investors' confidence in the stock market and redirect the flow of capital away from the market leading to high share price volatility (Nishat and Irfan, 2004)

Nel and Kruger (2001), argues that share prices with higher volatility results in greater risk that the share might not perform as expected. They further conclude that if the volatility of a share price increases, investors will perceive the share to be more risky and vice versa. Similarly, Guo (2002) argues the volatility of share price is the systemic risk faced by investors who owns ordinary shares investment.

share price's volatility is a benchmark for measuring risk which indicate changing pace in the stock's price over a determined period; the more considerable volatility implies that the possibility of gain or loss is higher in short-term. So the price of volatile stock would differ considerably over time and it is very difficult to predict the future price of this stock (Hashemijoo and Ardekani, 2012).

According to Nel and Krugler, (2001), Share Price Volatility refers to the degree, to which share prices vary over a certain length of time. Honggang and Rosser (2003) also define Share Price Volatility as a measure of the risk in respect of future returns on an investment. Montgomery (2002) also indicates that share price volatility is also a measure of the frequency and size of fluctuations in the price of a share.

Dividend policy refers to management's long-term decision on how to deploy cash flows from business activities, that is, how much to invest in the business, and how much to return to shareholders (Nitta, 2006). Dividend payout is the percentage of earnings a company pays in cash to its shareholders (Van Horne, 2001).

Dividend policy on the other hand remains a source of controversy despite years of theoretical and empirical research, including its linkage between dividend policy and share price volatility, (Allen and Rachim, 1996). Paying large dividends reduces risk and thus influence share price (Gordon, 1963) and is a proxy for the future earnings (Baskin, 1989). The rate of return effect, as discussed by Gordon (1963), is that a firm with low payout and low dividend yield may tend to be valued more in terms of future investment opportunities. Consequently,

its share price may be more sensitive to changing estimates of rates of return over distant time periods. Thus expanding firms although may have lower payout ratio and dividend yield, exhibit price stability. This may be because dividend yields and payout ratio serves as proxies for the amount of projected growth opportunities. If forecasts of profits from growth opportunities are less reliable than forecasts of returns on assets in place, firms with low payout and low dividend yield may have greater price volatility. However, According to Rahman and Hossain (2007) that changes in share price volatility is not dominantly affected dividend yield.

Nairobi Stock Exchange (NSE) is an important emerging market of the East and Central Africa region among the developing countries. Few studies have attempted to analyse the long run behaviour of the market and related issues like Bitok *et al,* (2003) and Simiyu, (2010) but no work has been done to explore role of dividend yield and payout ratio in affecting the share prices volatility.

Furthermore, various scholars have had conflicting views about dividend policy. Miller and Modigliani (1961) demonstrated that under certain assumptions about perfect capital markets, dividend policy would be irrelevant. They argued that dividend policy has no effect on either the price of a firms share or its cost of capital. They rather argue that the firm's value is determined only by its basic earnings power and its business risk i.e. the value of the firm depends only on the income produced by its assets, not on how this income is split between dividends and retained earnings. On the other hand, Diamond, (1967); Gordon (1963), Lintner (1962), and Walter (1963) propose that cash dividends now are worth more than capital gains to be received in future(a bird in hand is worth more than two in the bush). Yet Brigham and Houston, (2004), assert that investors are interested in the income after tax. Dividends may have higher taxes than capital gains and thus investors prefer capital gains to cash dividends due to the tax effect.

The study thus seeks to determine the relationship between dividend policy and share price volatility for companies listed in the Nairobi Stock Exchange given the conflicting propositions about dividend policy and lack of studies in the market as pertains volatility of share prices.

2. Review of the Related Literature

Bohart (2006) argues that investors are drawn to the stock market to make money, which is done by selling stock at a price higher than what it was originally bought for. He further suggests that, since stock prices are largely connected to investors' moneymaking goals, which helps to understand their inner workings. He therefore concludes that share prices are established in the marketplace, but what causes their volatility (movements) is: Latest Information on share prices; inflation and share prices; economic strength of market and peers; psychological issues on stock prices; supply and demand and uncertainty.

There are two types of volatility – implied volatility and deterministic volatility. Implied volatility settles in the Black-Scholes model and, if we are dealing with an efficient market, it should be an efficient forecast of volatility, because it contains all the disposable market information, Daye *et al.* (2001). Soczo (2003) advocates two different approaches to estimating implied volatility value. The first is when historical data of the underlying asset is used for the estimation. The other approach is to use the stock pricing formula backward, calculating the implied volatility of the pricing formula belonging to a certain option price level observed on the market. This is an iterative method so we should change the volatility in the pricing formula until the calculated price equals to the current market value. The implied volatility level could be calculated for different prices and maturities. An earlier research related to implied volatility shows that its value changes for different stock prices (Hull, 1999). The second is that the probability distribution of the underlying asset's relative change is not normal distribution. The analysis of the implied volatility as a function of maturity also suggests that the expected volatility changes in time.

Deterministic or future volatility is calculated using Autoregressive Conditional Heteroscedasticity (ARCH) model. ARCH model is within the family of deterministic volatility models, the most general. When the subject of analysis is volatility, the autoregressive term refers to the persistence element and the term conditional Heteroscedasticity is used to describe the presumed dependence of current volatility from the level of past volatility. That is why we say that within these models there is a "stochastic and endogenous parameterisation of Heteroscedasticity", (Nicolau, 1999).

2.1. Dividend Yield, Dividend Payout Ratio and Share Price Volatility

Hashemijoo and Ardekani, (2012) in their empirical results showed that dividend yield and dividend payout were significantly related share price volatility. Similarly, Allen and Rachim (1996) reported a Positive relationship between share price volatility and dividend yield.in addition, Contrary to (Baskin, 1989)'s results, their findings showed that share price volatility has significant positive relationship with dividend yield. However, recent studies indicated negative relationship between the two dimensions of dividend policy (dividend payout ratio and dividend yield). For instance, Allen and Rachim (1996) reported negative relationship between share price

volatility and dividend payout. Their findings were echoed by Nazir et al (2010) in the study of listed firms in Karachi Stock Exchange (KSE) who found a negative relationship between share price volatility and dividend yield and dividend payout. Sen and Ray (2003) in their study in India revealed that dividend pay-out is by far the single important factor affecting stock prices.

Yasir et al., (2012) in their study of the association between dividend policy and stock price volatility in Pakistan. They concluded that the stock volatility is affected by the dividend policy, as the dividend yield (dividend payout ratio) are positively (negatively) associated with price volatility. One more result is that the signaling theory effect is applicable in defining the stock price volatility in Pakistan. In his study Jecheche, (2012) analyzed the effect of the dividend policy on share volatility in Zimbabwe and found that the two proxies of the dividend policy have significant effect on the price volatility, also the study offers empirical evidence supporting the signaling and arbitrage realization effects in Zimbabwe.

Based on the above literature review the study hypothesized that;

$H_{01:}$ *dividend yield has no significant effect on Share Price Volatility*

$H_{02:}$ *dividend payout ratio has no significant effect on Share Price Volatility*

3. Methodology

The data on payout ratio and dividend yield used for the study was obtained from annual statements of listed companies in the stock exchange that have been trading continuously for a period of ten (10) years from 1999 to 2008. The data on share prices were obtained from the Nairobi Stock Exchange and transformed into a suitable form to be used for the study. A period of ten (10) years is long enough to establish a relationship between the study variables (dividend policy – independent variable and share price volatility – dependent variable)

The data was analysed using correlation and multiple regression and the significance of each independent variable was tested at 99% confidence level. In calculating the share price volatility from the share prices, Parkinson 1980 formula was used. The formula is as follows;

$$\text{Volatility} = \left\{ \left\{ \frac{\text{(High Price – Low Price)}}{\text{(High Price + Low Price)/2}} \right\} 2 \right\} 1/2$$

From the data on share prices, the study extracted the yearly high and low prices which were used for the study. The data extracted is presented in table 9 at the end of the document. The data on dividend payout ratio was extracted from the financial statements. The dividend per share (interim and final) was multiplied by the number of outstanding common shares and then divided by the total earnings after tax for every company. The result of the computation is presented in table 6 at the end of the document. Finally the data on dividend yield was also extracted from the financial statements of the companies. The study totaled the annual dividends paid to common share holders and divided by the average market value of the common shares. The result of the computation is presented in table 7 at the end of the document.

3.1. Measurement of Variables

Share price: This is the dependent variable. It is based on the annual range of adjusted stock price obtained for each year. The range is then divided by the average of the highest and lowest prices obtained in the year and then squared (Hussainey et al., 2011)

Dividend payout ratio: This is the ratio of dividends per share to earnings per share for all available years (Hussainey et al., 2011).

Dividend yield: This is expressed as the dividend per share as a percentage of the share price. Dividend is calculated on gross dividends, i.e. excluding tax credits (Hussainey et al., 2011)

To analyse the data, the following regression model was used;

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + E$

Y = the dependent variable (Share Price Volatility)

β_0 - constant

$\beta_1, \beta_3, \beta_2, \beta 4$ – are regression coefficients or change induced in Y by each X variable

X_1 – dividend payout ratio

X_2 – dividend yield

} Independent variables

E – Error term

4 Findings and Discussions

The study calculated the means and standard deviations of dividends paid for the study period and the results are presented in table 8. Further the means, variance, and standard deviations we also computed for the study variables and results presented in table 1 below.

Table 2 reports the correlation between the variables utilized for the overall period (1999-2008). The correlation between price volatility and dividend payout ratio is –0.451, which is significant at 0.01. The correlation between price volatility and dividend yield is 0.052, significant at 0.05. The low inter-correlations among the explanatory variables used in the regressions indicate no reason to suspect serious multicolinearity.

In the study period (1999-2008) negative correlation between share price volatility and dividend payout ratio is consistent with theory (-0.451) i.e. the firms that have higher payout ratio have lower volatility in their share prices. The positive correlation between dividend yield and share price volatility (0.052) is inconsistent with the study's expectations that firms with higher dividend yield have low volatility in their share prices. This means that firms with high dividends have higher price volatility. In the NSE, the firms that pay high dividends are seen to be more volatile in their prices since most of the earnings are utilized in paying dividends rather than reinvesting.

Test of Hypotheses

We tested hypotheses using multiple regression analysis. First we standardized the variables were to reduce the effect of multicollinarity using interaction variables as recommended by Bauer and Curran (2005)

Hypothesis 1 stipulated that dividend yield has no significant effect on Share Price Volatility. However results in table 3 showed that hypothesis does not hold as evidence of beta coefficient of 0.124, $\rho<0.05$, thus, dividend yield positively affect the share price volatility. Increase of dividend yield increase share price volatility. These findings coincided with studies by Rachim (1996) and (Baskin, 1989) who also found positive effect of dividend yield on share price volatility. However, the findings contradict Nazir et al (2010) that dividend yield affect share price volatility negatively.

Hypothesis 2 postulated that dividend payout ratio has no significant effect on Share Price Volatility. Hypothesis 2, however is rejected as shown by the beta coefficients of -0.470, $\rho<0.05$. Hence, dividend payout ratio has negative significant effect on share price volatility. This implies that increase on payout ratio decreases share price volatility. This findings are consistent with Nazir et al (2010) and Yasir et al., (2012) findings that payout ratio had negative association with share price volatility.

5 Summary and conclusions

The study focused on the effects of dividend policy (Dividend Payout Ratio and Dividend Yield) as the independent variables and share price volatility as the dependent variable. Based on the study findings we believe that payout ratio is important determinant for share price volatility (Sen and Ray, 2003;Sadiq *et al*, 2013). we think that payout ratios reduces price volatility due to high confined of the managers of the firm in both the stability and increase in the firms' future earning based on public and private information (miller and rock, 1985). However, contrary to payout ratio, dividend yield enhance share price volatility. we therefore concluded that the higher the dividend yield the higher the share price volatility.

The above findings also contradict Miller and Modiglani (1961) claim that dividend policy is irrelevant because it has no effect on stock price. Nevertheless, if a firm increases its dividend it will limit the free cash available for managers and reduces the acuity of agency problem, which can be reflected in the stock price (Ramadan, 2013)

6 Recommendations

The study demonstrated that much of the existing theoretical literature on dividend policy and share price volatility can be applied to an emerging capital market such as NSE. Many of the factors that were found to be significant in the determination of share price volatility other than dividend policy are the same as those found in developed capital markets. Since the factors in the emerging markets are almost the same as those of the developed markets, emerging markets can adopt the policies similar to those of the more developed markets to enhance their growth.

- **Areas of further research**

The research has studied the effects of dividend policy on the share price volatility in the Nairobi Stock Exchange (NSE) – Kenya, which is an example of an emerging market in Africa. The analysis has produced some interesting results and one avenue for future research is to extend the study to other emerging markets, especially those in the East and Central Africa region. Since dividend policy only explains 21.8% of the variability of the share prices, it means that other factors explain more of the variability in the share prices. Study, therefore needs to be done testing other factors likely to cause the variability in the share prices. Some of the factors that can be examined include; agency costs, ownership structure, signaling, growth and investment opportunities, profitability of the firm and dividend taxes.

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Table 1: Descriptive Statistics for the Dependent and Independent Variables

	Minimum	Maximum	Mean	Std. Error	Std. Dev.	Variance
Share Price Volatility	0.233	1.090	0.7228	0.029023	0.181250	0.033
Dividend Payout Ratio	-0.060	2.371	0.4122	0.065232	0.407375	0.166
Dividend Yield	0.000	0.344	0.0440	0.008897	0.055559	0.003

Table 2: Correlation Matrix for the Study Variables

	Share Price Volatility	Dividend Payout Ratio	Dividend Yield
Share Price Volatility	1.000		
Dividend Payout	-0.451**	1.000	
Dividend Yield	0.052*	0.153	1.000

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 3: Regression between Share Price Volatility and Dividend Policy Variables

Variables	Coefficient	Beta	T-Value	Sig.
Dividend Payout ratio	-0.209	-0.470	-2.150	0.003
Dividend Yield	0.403	0.124	0.829	0.412

R^2 = 0.21.8; Adj. R^2 = 0.17.5
F = 5.023; Signif F = 0.012