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# Effect of Market Value Ratios on Stock Price Volatility of Listed Companies on Nairobi Securities Exchange in Kenya

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***Abstract:***
*Stock price volatility is widely regarded as one of the factors eroding investor confidence in the world's money markets. The share price fluctuates dramatically depending on a variety of factors. Knowledge of such factors and their potential impact on share prices is highly valuable because it enables investors to make sound investment decisions and firms to increase their market value. This article examined the effect of market to book value ration and earnings per share on stock price volatilities of listed firms in Nairobi Securities Exchange (NSE). It employed a longitudinal research design specifically random effect model and fond substantive evidence that both market to book value ratio and earnings per share are negatively affect stock price volatilities. Stock price volatilities varied from one firm to the other. These deviations may be as a result internal and external factors. Both have an impact on stock price fluctuations. The article suggests these internal factors may include the company's earnings, annual asset growth, liquidity, total net worth, and sales. External factors include government policies and their impact, other maybe interest rate movements, currency exchange rate fluctuations, and market sentiment, and the merger.*

***Keywords:*** *Market value ratios, stock price volatility and NSE*

## 1. Background Information

*1.1. Stock Price Volatility (SPV)*

Is a statistical measure of a security's price fluctuation over time (Osundina et al., 2016). SPVs are a critical phenomenon for investors worldwide, particularly in emerging markets such as Kenya. The SPV is of great interest in the capital market due to its impact on stock market stability and investor strategies. The share price fluctuates dramatically depending on a variety of factors. Knowledge of the factors causing these fluctuations and their potential impact on share prices is highly valuable because it allows investors to make wise investment decisions and firms to increase their market value.

According to Musallam (2018), the goal of investors investing in company stocks is to maximize their money, which will be accomplished through market stock prices. Market stock return is regarded as an important factor in determining the best investment opportunity. Investors need more information about a company's financial reporting to identify its fiscal health and financial performance in order to find the appropriate opportunity with a good profit and low risk. According to Anwaar (2016), financial information is one of the essential components that can help investors invest in a firm. Share prices are influenced by a variety of factors, including market value ratios (Nirmala, 2011).

According to Ndwiga (2016), the stock's volatility is frequently used to assess risk. The volatility of a stock indicates the rate at which its price changes over a given time period. The price of a volatile stock would fluctuate significantly over time, making it extremely difficult to predict the future price of such a stock. Concerns can arise when stock price volatility reaches extreme levels. If such volatility continues, firms will be less able to use their available capital efficiently because they will need to reserve a larger percentage of cash-equivalent investments to reassure lenders and regulators. Volatility raises market-making risks and forces market intermediaries to charge higher fees for liquidity services, resulting in lower market liquidity. Furthermore, high volatility discourages investors from holding stock because expected returns must be traded off for risk exposure, resulting in a demand for high-risk premiums to diversify against volatility risks.

In Africa, Ikhatua (2013) concluded that market value ratios influence stock volatility while attempting to determine if they contribute to stock volatility in the Nigerian Capital Market. Angahar (2015) discovered a significant relationship between revenues and stock prices on the Nigerian Stock Exchange. In Kenya, the Nairobi Securities Exchange

identified market volatility as a major challenge in its seminar paper No. 10 on Vision 2030. According to a Capital Market Authority report (2007), investors should clearly understand the concept of risk and return, as well as the fact that share prices can rise as well as fall. According to the Kenya Financial Sector Stability Report (2010), the Nairobi Securities Exchange experienced volatility from 2008 to 2010. Furthermore, the Financial Sector Regulators Forum of September 2017 reported thin liquidity in the market with increased concentration risks, with the top five (5) stocks accounting for 64 percent of market capitalization in 2016 and stock price volatility being very high. According to the Nairobi Securities Exchange (2011) report, the Nairobi Securities Exchange experienced extreme volatility in the last six months of 2011.

*1.2. Market to Book Value (MBV)*

Is a ratio that compares the value/price of the stock market to the company's book value, which is calculated as the difference between the value of assets owned and the value of liabilities. This ratio shows how much the market values a company's share book value (Sarwendhi & Samekto, 2014). The ratio is an appealing measure of performance because it indicates the difference between the firm's net assets and the market valuation. That is, the ratio reflects the premium (or discount) that the marketplaces on the firm's net assets, and thus reflects the efficiency with which the market perceives the firm's management.

High premiums imply that each and every additional shilling invested in the firm's net assets would yield attractive returns for investors; on the other hand, low premiums imply that the returns on additional investments are unlikely to be attractive (Goranova et al., 2010). The market to book value ratio is calculated by dividing the current closing price of the stock by the book value per share for the most recent quarter. The higher the market-to-book ratio, the more confident the market is in the company's prospects. The purpose of this study was to determine the impact of the market-to-book value ratio on the stock price volatility of companies listed on the Nairobi Stock Exchange (NSE).

*1.3. Earnings per Share (EPS)*

The percentage of a company's profit allocated to each individual share of stock. Earnings per share, or EPS, is a key financial metric that indicates a company's profitability. It is calculated by dividing the company's net income by the total number of shares outstanding. It is a tool that market participants frequently use to assess a company's profitability before purchasing its stock (Atidhira, 2017). EPS is a closely watched metric that is frequently used as a barometer to gauge a company's profitability per unit of shareholder ownership. As a result, earnings per share are a major driver of stock prices. Few things in the investment world operate in a vacuum, and stock price and dividend yield are two of them. The market price of a company's stock may rise if it has high earnings per share. This higher stock price may create a favourable impression of the company's products in the minds of customers, resulting in increased demand, sales, and, ultimately, earnings. Lower EPS, on the other hand, may cause stock prices to fall, resulting in lower consumer confidence, lower sales, and, ultimately, lower earnings per share. However, these connections are circular rather than direct (Khan et al., 2014). Earnings per share is calculated by dividing the period's net profit or loss attributable to equity shareholders by the weighted average number of equities shares outstanding. This paper looked at the impact of earnings per share on the volatility of stock prices for companies listed NSE, Kenya

*1.4. Statement of the Problem*

This research is inspired by several reports on stock investment, including a Capital Markets Authority report from 2007, which stated that stock prices have appreciated to record levels on average over the last four years (prior to the study period 2008-2019) and the price of quoted stocks has more than quadrupled. Many investors made a lot of money during this time period. Unfortunately, some investors forgot that the same stocks had suffered a record loss just five years before. As shown in Figure 1, the current NSE all share index has experienced volatility in recent years.

Furthermore, the Financial Sector Regulators Forum (September 2018, Issue No. 9) reports that as of December 2017, the Capital Markets Authority of Kenya licensed more firms in various categories, indicating a significant increase in activity. This could be due to a lack of understanding about the factors an investor should consider before making an investment decision. The research gap is created by the mixed and contradictory results of studies conducted across various exchanges and located in various global socioeconomic and political parameters. As a result, the purpose of this article was to determine the impact of market value ratios, specifically the market book value ratio and earnings per share, on the volatility of stocks traded on the NSE.

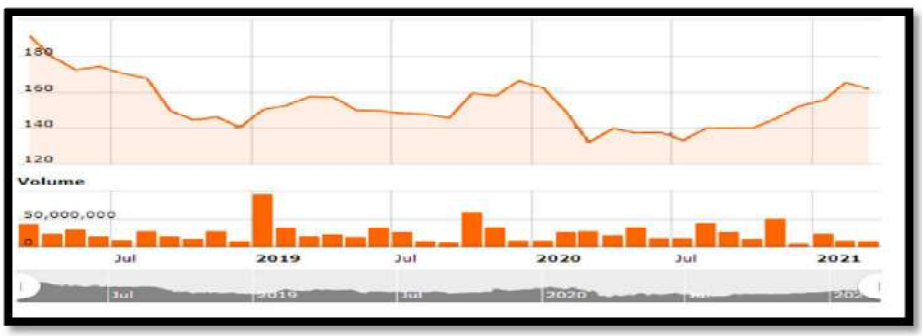


*Figure 1: NSE All Share Index (2018-2021)*
*Source: Trading Economics (2020) https://www.african-markets.com/en/stock-markets/nse*

## 2. Empirical Literature Review

*2.1. Market to Book Value and Stock Price Volatilities*

The book value of a firm is an important feature that provides useful information on the firm's value at any point in time. The book values of companies play an important role in the valuation process. According to a study conducted by Penman (2016), the price-book value multiple is strongly related to the prediction of future company equity value. Furthermore, Aras and Yilmaz (2018) discovered that market-book multiples play an important role in predicting share returns across 12 countries using cross-sectional data. Fairfield (2014) suggests a model for predicting the impact of book value on share price prediction. According to his research, the price-book value multiple has a positive relationship with the future share return of selected companies.

All stocks' price-book value multiple could fall or rise, resulting in lower or higher share returns. As a result, the company's price-book value multiple plays an important role in predicting stock returns (Foster, 2010). For cross-sectional information data analysis from 1963 to 1990, there is a significant relationship between price-book value and share earnings of companies listed on the American Stock Exchange (ASE) and New York Stock Exchange (NSE) (Fama & French, 2012). Nonetheless, other equity valuation multiples predict performance; however, the price-book value multiple has the greatest explanation for prospective stock returns of companies when compared to other equity valuation multiples (Antonios, Ioannis, & Panagiotis, 2012).

As per the work of Burgstahler and Dichev (2017), valuation approaches that concentrate on price-to book value multiples are more suitable for companies that experience small return on their stocks (Burgstahler & Dichev, 2017). Evidence from Danish studies revealed that the price-book value (P/B) multiple is greater than the price-earnings (P/E), implying that the price-book value (P/B) multiples are the most and greatest predictors of valuation for firms' stocks (Elkjaer, Damgaard, & Kumah, 2019). Similarly, Goh (2011) investigated the accuracy of equity valuations by forecasting stock prices using the four equity value multiples (price-earnings, price-book, price-cash flow, and price-sales multiples). The study discovered that the price-book valuation (P/B) multiple represents the most accurate stock price forecaster for the period. Furthermore, Ittner and Larcker (2011) discovered that market-book value is strongly related to market forecast.

*2.2. Earnings per Share and Stock Price Volatilities*

Earnings per share has been used in several studies, and it has been found to have an effect on stock price. Mirfakhr-Al-Dini et al. (2011) conducted a study on the relationship between financial variables and stock price. Dividends per share, earnings per share, and the Price to Earnings ratio are considered independent variables, while stock price is considered a dependent variable. According to the study, there is a positive and significant relationship between earnings per share and stock price, while dividends per share and price to earnings ratio have a negative and significant impact on the said company's stock price. Another study by Emamgholipour *et al*. (2013) to inspect the impact of selected financial variables on the stock return using earnings per share, price to earnings ratio and ratio of market value to book value as independent variables and stock return as dependent variable found that earnings per share has significant and positive impact on stock return and price to earnings ratio and market value to book value ratio had negative significant impact on stock return.

Glezakos et al. (2012) proposed that earnings per share and book value per share have explanatory power in the formation of stock prices while analyzing the Impact of Accounting Information on Stock Prices in Athens. Menike and Prabath (2014) also investigate the factors that influence stock price. The results of a single and multiple regressions model show that EPS, DPS, and BVPS were all positive and had a significant impact on the stock price. Din (2017) conducted a study on stock return predictability using financial ratios, and the study found that financial ratios have the ability to predict stock returns. Menike and Prabath (2014) investigated the relationship between financial variables and stock price. DPS, EPS, and BVPS were used as independent variables, and stock price was used as the dependent variable. The results showed that EPS, DPS, and BVPS were all positive and had a significant impact on stock price.

## 3. Research Methodology

*3.1. A Research Design*

The general plan of how research questions will be answered is referred to as the research design (Rahi, 2017). A research design is the conceptual framework within which research is carried out. This study used an explanatory research design with a longitudinal approach. Explanatory research seeks out causes and reasons and presents evidence to support or refute an explanation or prediction. Explanatory research is carried out to discover and report some relationships between various aspects of the phenomenon under investigation (Cecez-Kecmanovic & Kenan 2018).

*3.2. Target Population*

The research population for this study comprised all companies listed on the Nairobi Securities Exchange (NSE) between January 2008 and December 2019. NSE was selected because it is a securities exchange resident in the frontier market.

*3.3. Variable Description and Measurement*

Variables are described as indicated in Table 1

| Variable | Description | Measurement |
|---|---|---|
| Stock Price Volatility | Stock price volatility is the relative rate at which the price of a security moves up and down or simply it's the variation in stock price. | SPV is measured follows; Parkinson (1980) extreme value method is used because this method is far superior to taking annual closing and opening prices. It means yearly highest price of stock minus lowest stock price i.e., annual range is divided by average of lowest and highest share prices, and then raising second power to it. At the end square root is applied to get standard deviation. |
| Market to Book value | Refers to the ratio of a share's market value to book value. | It is calculated by dividing market capitalization by net assets (Marangu & Jagongo, 2014). |
| Earnings per share | Earnings per share or EPS is an important financial measure, which indicates the profitability of a company. | It is calculated by dividing the company's net income with its total number of outstanding shares (Atidhira, 2017). |

*Table 1: Description and Measurement of Variables*

*3.4. Stationarity Tests*

The article employed two-unit root tests. The Levin-Lin-Chu (LLC) and Im-Pesaran-Shin, (IPS). Their models are described below.

The Levin-Lin-Chu panel unit root test is performed on the following model.

$$\hat{\rho}_{Yi}^2 = \frac{1}{T-1}\sum_{t=1}^{T}\Delta Y_{it}^2 + 2\sum_{L=1}^{\bar{K}}\omega\bar{K}L\left[\frac{1}{T-1}\sum_{t=2+L}^{T}\Delta Y_{it}\Delta Y_{it-L}\right] \quad \text{.....1}$$

Where $\varepsilon_t$ a white noise process is $\rho = 1$ indicates a unit root $0 < \rho < 1$ implies stationarity (Levin *et al*., 2002 and Phillips & Moon, 2000). Levin *et al.,* (2002) propose this test for the null hypothesis of unit root against a homogeneous stationary hypothesis.

Im-Pesaran-Shin, (IPS) is an extension of the Dickey-Fuller (DF) test. The classic *DF* test for pure time series is usually presented as;

$$\Delta Y_{it} = \phi_i Y_{i,t-1} + Z_{it}'\gamma_i + \varepsilon_{it} \quad \text{.....2}$$

Where $\varepsilon_t$ is a white noise $\rho = 1$ indicate a unit root $0 < \rho < 1$ implies stationarity (Im, Pesaran & Shin, 2003) The null hypothesis for this test is that all panel contain unit root.

*3.5. Economic Model*

The general empirical model used in this study is Randon effect model defined as follows:

$$SPV_{it} = \beta_0 + \beta_{1t}X_{1t} + \beta k_{2t}X_{2t} + v_{it} + \varepsilon_{it} \quad \text{.....3}$$

Where: $i = 1, 2 \ldots N, t = 1, 2, 3 \ldots T$. Here $i$ is the cross section and $t$ is the time. Since the $SPV$ variable has different values in each time period of each unit, it is expressed with two sub-indices as i and t. $SPV_{it}$ = dependent variable which represent changes in stock prices of company $i$ at time $t$. $\beta_0$ = the intercept or constant term of company i at time *t*, $\beta_{it}$ = the coefficient of the independent variable at time *t*, $X_{it}$= a vector of independent variables at time *t*, $v_{it}$ individual specific effects and $\varepsilon_{it}$ = white noise error term of company $i$ at time *t*.

**4. Results and Discussions**

Stock price volatility (SPV) measures tendency of a security's price to be vary had a minimum value of zero and maximum of 1.34 with a mean of .16 and standard deviation of .137.


*Figure 2: Stock Price Volatilities for Firms Listed in NSE*

The smaller standard deviation indicates that stock price volatility oscillated around the mean during the study period. Some firms listed on the NSE with low stock price volatility include Barclays Bank, KenGen, Safaricom, and TPS LTD, to name a few. CO-OP Bank, EABL, and Sasini PLC have high volatility, as shown in Figure 2. Moreover, the market book value ratio (MBV) is the ratio of a share's market value to its book value, which is calculated by dividing the market capitalization by the net assets (Marangu & Jagongo, 2014). The average market book value of NSE-listed firms was 1.42, with a standard deviation of 2.11. The lowest and highest market to book values were 0 and 8.53, respectively. A small average value of 1.42 with a slightly higher standard deviation indicates that there are significant differences between firms. Many of the companies have lower market book value than the others. Graphically, Figure 3 show firms such as East Africa Breweries, and Safaricom have large market price book value. This indicates the mention firms with the largest market book value have an important feature that offers useful information. Ohlson (2011) opined that company book values occupies a prominent role towards valuation process.

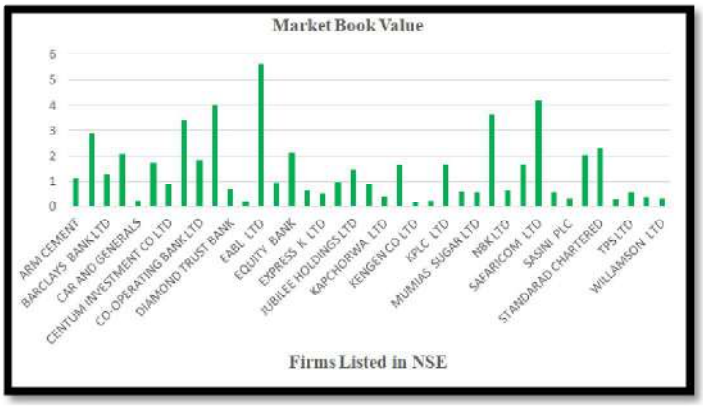


*Figure 3: Market Book Value for Firms Listed in NSE*

Earnings per share (EPS) is an important financial measure that indicates a company's good performance. It was calculated by dividing the firm's net income by the total number of outstanding shares (Atidhira, 2017).

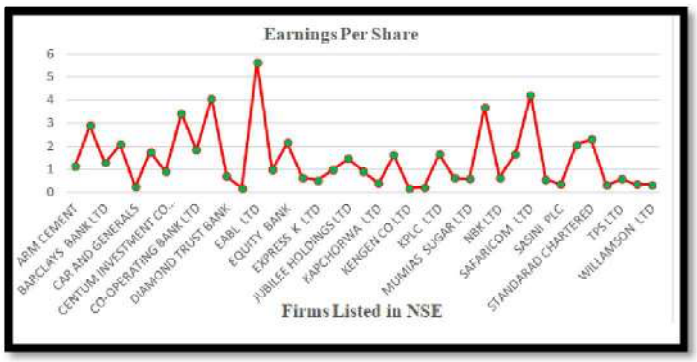


*Figure 4: Earnings per Share for Firms Listed in NSE*

The results show that earnings per share for the 39 firms studied had a mean of 8.19 and a huge standard deviation of 15.17, indicating that the majority of the firms have diverse earnings per share. The standard deviation measures how far apart the data are from the mean. When the standard deviation is low, the variance is low, and the values are close to the mean. EBL Ltd and Safaricom are two examples of publicly traded companies with high earnings per share (see Figure 3). These are companies whose stock price may rise in the market. Higher stock prices may create a

positive brand of the company's products in the minds of customers, resulting in increased demand, sales, and, ultimately, earnings.

Table 2 present results for stationarity, the unadjusted t is a conventional t statistic for testing the null hypothesis. When the model does not include panel-specific means or trends, this test statistic has a standard normal limiting distribution and its p-value; the unadjusted statistic $t$ diverges to negative infinity if trends or panel-specific constants are included, so a p-value is not displayed in those cases. It is observed that all the variable, stock price volatility (SPV), market to book value (MBV) and earnings per share (EPS) are stationary at levels. The homogeneity hypothesis used in LLC can be however too restrictive since panels can be composed of several cross-sections with different autoregressive coefficients (Barreira & Rodrigues, 2005). The main argument is that under the alternative hypothesis the same convergence rate across entities can bias panel unit root tests. Imposing homogeneity when there is presence of coefficient heterogeneity in a cross-section data and can result in misleading conclusions. IPS test presents an alternative to overcome this restriction (Im, Pesaran & Shin., 2003). Since all probabilities are less than .05, the null hypothesis rejected, and alternative hypothesis of panels are stationary holds.

| **Levin-Lin-Chu Unit Root Test** | | | | | |
|---|---|---|---|---|---|
| $H_0$: Panels contains unit root | | | | | |
| $H_1$: panels are stationary | | | | | |
| **At Levels** | | | | | |
| **Individual Intercept Included** | | | | | |
| **Variables** | **Unadjusted $t$** | **Adjusted $t^*$** | **p-value** | **Remark** | |
| SPV | -16.3251 | -9.8497 | .000 | Stationary | |
| MBV | -14.1973 | -8.5207 | .000 | Stationary | |
| EPS | -16.5728 | -8.4424 | .000 | Stationary | |
| **Im-Pesaran-Shin Unit Root Test** | | | | | |
| $H_0$: Panels contains unit root | | | | | |
| $H_1$: panels are stationary | | | | | |
| | | **1%** | **5%** | **10%** | |
| | | **-2.040** | **-1.900** | **-1.810** | |
| **Variables** | **$t$-bar** | **$t$-tilde bar** | **$z-t$-tilde bar** | **p** | **Remark** |
| SPV | -6.6039 | -4.4778 | -13.0917 | .0000 | Stationary |
| MPBV | -5.7113 | -4.1839 | -11.8139 | .0000 | Stationary |
| EPS | -6.3408 | -4.4145 | -12.8166 | .0000 | Stationary |

*Table 2: Stationarity Results*

Table 3 displays the Random Effects results (RE). It demonstrates that all two variables have a negative and significant impact on stock price volatility, as evidenced by coefficients and their respective probabilities. Market price book value (MPBV) had a significant negative impact on stock price volatility. The negative effect implies that a one-percentage-point increase in the market-to-book ratio will result in a 1.64-percentage-point decrease in stock price volatility. This finding indicates that stocks with a higher market value are less likely to be volatile.

| **SPV** | $\beta$ | $\delta$ | **z** | **P > \|z\|** |
|---|---|---|---|---|
| MBV | -.0164 | .0037 | -4.45 | .000 |
| EPS | -.0032 | .0003 | -8.42 | .000 |
| Constant | .2044 | .0082 | 24.89 | .000 |
| Sigma_$\mu_i$ | 0 | | | |
| Sigma_$\mu_i$ | . 1253 | | | |
| rho | 0 | | | |

*Table 3: Random Effect Results*

The market-to-book ratio measures growth potential, and a negative coefficient indicates that investors pay more attention to companies with strong growth prospects and boost their returns during good times. Bianconi and Yoshino (2017) discovered similar results in their study and concluded that companies with a high market-to-book ratio are much more confident about their future prospects, resulting in less volatile stock prices. The market-to-book ratio is commonly used as a proxy for a company's growth prospects, according to Thanatawee (2021). As a result, companies with a high market-to-book ratio, also known as growth stocks, imply that the market thinks highly of the company and its future. Dung (2018) the market to book ratio is a metric for determining a company's potential for growth. When a firm has great growth potential, it will communicate corporate information more openly in the market so that investors may assess the firm's capacity which reduces the likelihood of volatile stock prices. Despite the many supports of the study findings, the study by Wagle (2021) deviates that found that market to book value has a positive and significant effect on volatility of stock prices.

Furthermore, a negative and significant effect of earnings per share on stock price volatility was observed. A one-percentage-point increase in earnings per share results in a.32-percentage-point decrease in stock price volatility. The stock price, or the price of a single share of a company's sellable stock, is a very sensitive component for companies that

are listed on a securities exchange. The stock market reflects the economy, which is important for the country's industrial and commercial development (Silwal & Napit 2019). When the stock price is stable, the board of directors and management are pleased; when it becomes volatile, all concerned parties, including shareholders, become concerned.

Furthermore, investors are serious risk avoiders, and the unpredictability of their investments is a major concern for them when deciding which investment option to pursue after carefully examining the nature of the risk they may face (Hunjra et al., 2014). According to Vutale and Cheng (2017), a company with higher earnings per share is a motivator for both investors and shareholders because it ensures that the company's going concern is encouraging, which attracts many investors because their rate of return is guaranteed. A company with poor management and volatile stock prices, on the other hand, risks being taken over or even liquidated. They choose to put their money into reliable companies instead of those ones that are risky since it reduces their risk. The current results are consistent with the findings of Sharif & Pillai (2015) who did a similar study in Bahrain stock exchange and suggested that stable stock price is preferable as it increases the confidence of the management and investors will also increase. The study results also are agreeing with the findings of Dissanayake & Wickramasinghe (2016) who contended that higher earnings per share lower the chances of stock prices to be volatile.

## 5. Conclusion

Based on the findings, the study concludes that there are huge deviations of stock prices that differ from one firm to the other. These deviations may be as a result internal and external factors. Both have an impact on stock price fluctuations. Internal factors are alluded to the company's earnings, annual asset growth, liquidity, total net worth, and sales. External factors may include government policies and their impact, other maybe interest rate movements, currency exchange rate fluctuations, and market sentiment, and the merger.

## 6. Recommendations

It is recommended based on the findings, that firms listed in NSE to desirable compare Market to book ratios between companies in the same industry. This is because market-to-book value ratio assists a company in determining whether its asset value is comparable to its stock market price. The -book value ratio is used by investors to determine whether the stock price of a company is appropriately valued. MBV is an appealing measure of efficiency because it indicates the difference between the company's current net assets and the market valuation. Also, to create a favourable impression of the company's products in the minds of customers by enhancing earnings per share. This is because a company with high earnings per share may see its stock price rise. This higher stock price results an increased demand, increased sales, and, ultimately, higher earnings. Low earnings per share may cause stock prices to fall, resulting in lower consumer confidence, lower sales, and, ultimately, lower earnings per share.

## 7. References


i. Angahar, P.A., & Malizu, J. (2015). The Relationship between Market value ratios and Stock Market Returns on the Nigerian Stock Exchange. *Management and Administrative Sciences Review*, *4*(1), 76-86.

ii. Antonios, S., Ioannis, S., & Panagiotis, A. (2012). Equity valuation with the use of multiples. *American Journal of Applied Sciences*, *9*(1), 60.

iii. Atidhira, A.T., & Yustina, A.I. (2017). The influence of return on asset, debt to equity ratio, earnings per share, and company size on share return in property and real estate companies. *JAAF (Journal of Applied Accounting and Finance)*, 1(2), 128-146.

iv. Atidhira, A.T., & Yustina, A.I. (2017). The influence of return on asset, debt to equity ratio, earnings per share, and company size on share return in property and real estate companies. *JAAF (Journal of Applied Accounting and Finance)*, 1(2), 128-146.

v. Barreira, A. P., & Rodrigues, P. M. (2005). Unit root tests for panel data: a survey and an application. *Estudos II*, 665-685.

vi. Bianconi, M., & Yoshino, J. A. (2017). Valuation of the worldwide commodities sector: The role of market-to-book and return on equity. *Studies in Economics and Finance*.

vii. Burgstahler, D., & Chuk, E. (2017). What have we learned about earnings management? Integrating discontinuity evidence. *Contemporary Accounting Research*, *34*(2), 726-749.

viii. Cecez-Kecmanovic, D., & Kennan, M. A. (2018). The methodological landscape Information systems and knowledge. *Research Methods*, 127.

ix. Cheng, C.S., Lee, B.S., & Yang, S. (2013). The value relevance of earnings levels in the return-earnings relation. *International Journal of Accounting and Information Management*, *21*(4), 260-284

x. Din, W.U. (2017). *Stock return predictability with financial ratios*: Evidence from PSX 100 index companies. Available at SSRN 3077890.

xi. Dissanayake, S., & Wickramasinghe, M. (2016). Earnings Fluctuation on Share Price Volatility. *Account and Financial Management Journal*, *1*(5).

xii. Dung, P. T. (2018). *Foreign ownership and stock return volatility of industrial firms in Ho Chi Minh stock exchange* (Doctoral dissertation, International University-HCMC). Dynamic Institutional Preferences', *The Review of Financial Studies,* Vol.16, n° 4, pp.1203-1238.

xiii. Emamgholipour, M., Pouraghajan, A., Tabari, N.A.Y., Haghparast, M., & Shirsavar, A.A.A. (2013). The effects of performance evaluation market ratios on the stock return: Evidence from the Tehran stock exchange. *International Research Journal of Applied and Basic Sciences*, 4(3), 696-703.

xiv. Fairfield, J. A. (2014). BitProperty. *S. Cal. L. Rev.*, *88*, 805.

xv. Fama, E. F., & French, K. R. (2012). Size, value, and momentum in international stock returns. *Journal of financial economics*, *105*(3), 457-472.

xvi. Foster, B. P., & Shastri, T. (2010). The subprime lending crisis and reliable reporting. *The CPA Journal*, *80*(4), 20.

xvii. Glezakos, M., Mylonakis, J., & Kafouros, C. (2012). The impact of accounting information on stock prices: Evidence from the Athens Stock Exchange. *International Journal of Economics and Finance*, 4(2), 56-68.

xviii. Goh, J. C., Jiang, F., Tu, J., & Wang, Y. (2013). Can US economic variables predict the Chinese stock market? *Pacific-Basin Finance Journal*, *22*, 69-87.

xix. Goranova, M., Dharwadkar, R., & Brandes, P. (2010). Owners on both sides of the deal: Mergers and acquisitions and overlapping institutional ownership. *Strategic Management Journal*, *31*(10), 1114-1135.

xx. Hunjra, A. I., Ijaz, M., Chani, D., Irfan, M., & Mustafa, U. (2014). Impact of dividend policy, earning per share, return on equity, profit after tax on stock prices. *Hunjra, AI, Ijaz, M. S, Chani, MI, Hassan, S. and Mustafa, U. (2014). Impact of Dividend Policy, Earning per Share, Return on Equity, Profit after Tax on Stock Prices. International Journal of Economics and Empirical Research*, *2*(3), 109-115.

xxi. Ikhatua, O.J. (2013). Market value ratios and stock volatility in the Nigerian Capital Market: A GARCH analysis approach. *International Review of Management and Business Research*, *2*(1), 265.

xxii. Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of econometrics*, *115*(1), 53-74.

xxiii. Khan, T.R., Islam, M., Choudhury, T.T., & Adnan, A.M. (2014). *How earning per share (EPS) effects on share price and firm value*.

xxiv. Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of econometrics*, *108*(1), 1-24.

xxv. Marangu, K., & Jagongo, A. (2014). Price to book value ratio and financial statement variables (An empirical study of companies quoted at Nairobi securities exchange, Kenya). *Global Journal of Commerce & Management Perspective*, *3*(6), 50-56.

xxvi. Menike, M. G. P. D., & Prabath, U. S. (2014). The impact of accounting variables on stock price: evidence from the Colombo Stock Exchange, Sri Lanka. *International Journal of Business and Management*, *9*(5), 125.

xxvii. Mirfakhr-Al-Dini, S. H., Dehavi, H. D., Zarezadeh, E., Armesh, H., Manafi, M., & Zraezadehand, S. (2011). Fitting the relationship between financial variables and stock price through fuzzy regression case study: Iran Khodro Company. *International Journal of Business and Social Science*, *2*(11).

xxviii. Musallam, S. R. (2018). Exploring the relationship between financial ratios and market stock returns. *Eurasian Journal of Business and Economics*, *11*(21), 101-116.

xxix. Ndwiga, D., & Muriu, P.W. (2016). Stock Returns and Volatility İn an Emerging Equity Market. Evidence from Kenya. *European Scientific Journal, ESJ*, *12*(4), 79.

xxx. Nirmala, P. S., Sanju, P. S., & Ramachandran, M. (2011). Determinants of share prices in India. *Journal of emerging trends in economics and management sciences*, *2*(2), 124-130.

xxxi. Osundina, J.A., Jayeoba, O.O., & Olayinka, I.M. (2016). Impact of market value ratios on stock price volatility (a study of selected quoted manufacturing companies in Nigeria). *International Journal of Business and Management Invention*, *5*(11), 41-54.

xxxii. Parkinson, M. (1980). The extreme value method for estimating the variance of the rate of return. *Journal of business*, 61-65.

xxxiii. Penman, S. H., Reggiani, F., Richardson, S. A., & Tuna, I. (2018). A framework for identifying accounting characteristics for asset pricing models, with an evaluation of book-to-price. *European Financial Management*, *24*(4), 488-520.

xxxiv. Phillips, P. C., & Moon, H. R. (2000). Nonstationary panel data analysis: An overview of some recent developments. *Econometric reviews*, *19*(3), 263-286.

xxxv. Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences*, 6(2), 1-5.

xxxvi. Sarwendhi, R. A., & Samekto, A. (2014). The effect of market-to-book ratio, asset structure, and earnings after tax on the level of leverage in non-financial companies listed in Indonesia Stock Exchange 2007-2012. *The Indonesian Accounting Review*, *4*(2), 149-156.

xxxvii. Sharif, T., Purohit, H., & Pillai, R. (2015). Analysis of factors affecting share prices: The case of Bahrain stock exchange. *International Journal of Economics and Finance*, 7(3), 207-216

xxxviii. Silwal, P. P., & Napit, S. (2019). Fundamentals of Stock Price in Nepalese commercial banks. *International Research Journal of Management Science*, *4*, 83-98.

xxxix. Thanatawee, Y. (2021). The impact of foreign ownership on stock price volatility: Evidence from Thailand. *Journal of Asian Finance, Economics and Business*, *8*(1), 007-014.

xl. Vutale, A. V., & Chen, B. The Effects of Dividend Policy on Market Share Price of the Listed Companies at the Nairobi Securities Exchange (NSE) in Kenya.

xli. Wagle, S. (2021). Determinant of Stock Market Prices in Nepal: A Case of Commercial Banks. *SDMIMD Journal of Management*, *12*(2), 1-9.

xlii. Yildirim, C. (2018). *The factors affecting the financial performance: Evidence from the aviation industry* (Master's thesis, Sosyal Bilimler Enstitüsü).