

Trading Volume, Trading Price, Trading Frequency and Stock Return Volatility of Everest Bank Limited

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Abstract:

The primary objective of this study is to measure the relationship between stock returns, trading volume, trading frequency and trading price volatility of Everest Bank Limited. We analyzed studies using descriptive studies and randomized comparative studies. A 12-year panel data set was used. 1873 observations are analyzed to draw correct conclusions about the study. Descriptive models provide data on average stock returns, trading volume, and price volatility. EBL investors have faced high risk when investing in stocks for 12 years. There is an important and positive relationship between them. Likewise, volume and price have a positive and significant impact on stock returns.

Keywords: EBL, stock return, trading volume, trading price, and trading quantity.

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Introduction

Share price, trading volume, number of trades and price earnings ratio are key indicators frequently published in the media to report on financial market conditions and are closely monitored by investors. Market participants assume that having inside knowledge of price movements and trading volumes will enhance their understanding of market dynamics and consequently achieve financial success. The relationship between these variables is the result of a single market process and a study of one of these variables cannot be complete until the other variables are also taken into account.

Since stock price volatility can be used as a measure of risk in financial markets, it has received much attention from scholars and practitioners over the past 20 years. In recent years, there has been a growing interest in modeling time-varying volatility of stock returns. Many economic models assume that variance, a measure of uncertainty, remains constant over time. Economic time series have been shown to exhibit periods of unusually high volatility and periods of relative calm (Engle, 1982). In these circumstances, the assumption of constant variance is inappropriate (Nelson, 1991). It has been established that time series depend on past values (autoregressive), depend on past information (conditional), and exhibit non-constant variance (heteroscedasticity). It has been found that stock market volatility varies over time and is positively correlated. Large changes tend to follow large changes, and small changes tend to follow small changes, which mean that financial income data is dense with volatility.

Most studies on the relationship between volatility and trading volume have been done in developed financial markets, but little has been done in emerging financial markets such as Nepal. The purpose of

this study is to contribute to the literature by examining the relationship between trading volume and stock return volatility of the Nepal Stock Exchange (NEPSE) using a relatively up-to-date database that includes individual stocks rather than general stock indices.

Review of Previous Studies

Godfrey, Granger, and Morgenstern (1964) presented evidence from a variety of data series, including daily stock trading data. However, they did not find a relationship between price or price difference and the absolute value of quantity. Another observation is that the difference between daily highs and lows correlates well with daily trading volume.

The stock market revolves around two key factors: yield and volume. Returns can be seen as minuscule estimates and amounts, but how discrepancies they are. Stock prices may not reflect all information about market share price dynamics and volume. Consequently, studying the simultaneous dynamics of volume and volatility is important for improving our knowledge of the microstructure of stock markets (Mestel et al., 2005). Many scholars have considered the relationship between the volatility of stock returns and trading volume.

Pant (2011) investigated the impact of festivals and auspicious days on the Nepalese stock market. In this study, NEPSE returns from mid-July 1997 to mid-July 2010 were used. Descriptive statistics and linear regression models were used to investigate the change in daily stock returns due to the lunar calendar. The study found evidence of the influence of the lunar calendar, particularly during the Ashwin Krishna Pakchha period, on lower yields, lower prices and lower trading volumes.

Achieng (2013) compared all 58 companies listed on the NSE as of December 31, 2012, including the period from January 2008 to December 2012, using the regression model proposed by Li and Rui. Stock price and trading volume were explained by factors other than the relationship between the two variables.

Boonvorachote and Lakmas (2016) investigated the relationship between trading volume, price volatility and stock returns. Volume, volatility and income have a positive relationship. During the period 2006-2016, Narayan and Reddy (2017) investigated the causal relationship between stock returns, trading volume, and price volatility in 10 National Stock Exchange (NSE) sectoral indices. The study also showed that trading volume and price volatility have a significant impact on stock returns. Chowdhary, Singh and Soni (2019) investigated the relationship between foreign institutional investment (FII) and equity market returns, trading volume and volatility in India from January 1999 to May 2017. The results show that the positive relationship between volume, price variance and trailing market returns does not affect volume or price volatility.

Pan and Misra (2020) investigated the effects of price changes, trading volume, and yield volatility on returns. The research results have important implications for stock price, trading volume, and yield volatility. Emenike and Enoch (2020) investigated the impact of stock market returns and volatility on traditional and emerging stock markets. Volatility and trading volume affect the profitability of the market. The overall results of the study show that price volatility has a positive effect on market returns and trading volume reduces market returns.

Conceptual Review and framework

Baral and Shrestha (2006) studied the behavior of commercial bank stock prices in the Nepalese market using daily stock prices for the 2005/06 fiscal year. In this study, the volatility of the daily stock price, commercial bank index, and NEPSE index was analyzed using descriptive statistical tools such as mean, standard deviation (SD), and coefficient of variation (CV). We also used two logical statistical tools, serial correlation and serial tests, to measure the independence and randomness of daily stock prices. This study concluded that the Random Walk Hypothesis (RWH) of the Nepalese market is incorrect.

Pradhan and KC (2010) showed that the time series of exponential changes are independent of each other for the efficient market hypothesis and stock price movements. This study was based on secondary sources and included 26 securities that were actively traded from mid-July 2005 to mid-July 2008 out of 147 companies listed on the Nepal Stock Exchange. Autocorrelation tests and running tests were used to test

the random walk hypothesis, and the results clearly showed that the random walk hypothesis was wrong, wrong for frequently traded companies, and only suitable for less frequently traded companies.

Horn, Reinhart, and Trebesh (2019) examined the stock market and its movements. According to the Efficient Market Hypothesis (EMH), asset prices fully reflect all available information. A day-of-week effect refers to a trend of consistently abnormal returns on a particular day of the week. This is oddly contrary to the random walk theory, which implies that markets are not efficient in their weak form.

Neupane (2021) examined the relationship between the stock return, trading volume, trading frequency, trading quantity, and trading price volatility of the Nepalese commercial banks of NEPSE. The dynamic relationship between them can be presented as:

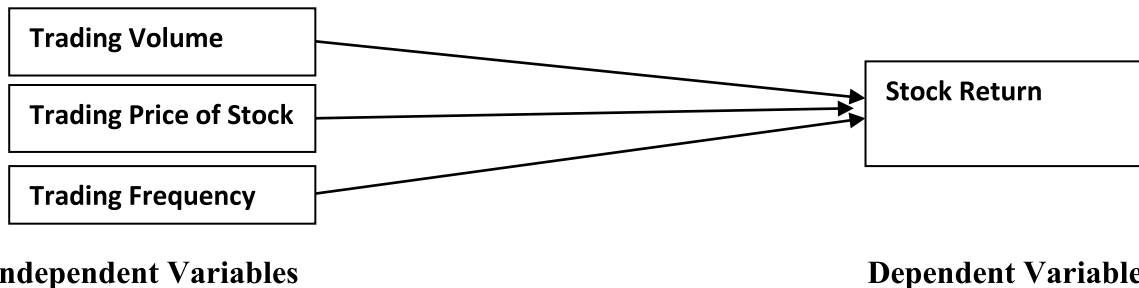


Figure 1 The relationship between dependent and independent variables

Statement of Problem

Stock market movements are difficult to understand and even more difficult to predict. This requires empirical analysis. Research in this area has investigated volume price/yield ratios in a variety of contexts and using a variety of analytical methods (Godfrey, Granger, and Morgenstern, 1964).

The Nepal stock market, like other emerging stock markets, is characterized by a small number of listed companies, a low market capitalization ratio, a low trading value ratio, low turnover, volatility, concentration, low liquidity and risky markets. Low turnover (Mainali, 2011) studies have shown that there is a relationship between volatility and volume, which has been confirmed by numerous studies and shows a positive relationship between volatility and number of trades.

According to Bajracharya (2020) stock price, trading volume, trading quantity, and stock returns are the determinants of bank and non-bank stock prices in Nepal. The major influence on the market price per share was established by EPS, profitability, investment prospects, business size, and liquidity. Similarly, investment possibilities, liquidity, and leverage are the most important elements influencing Nepalese commercial banks' price-earnings ratio.

There is virtually little literature on the Nepalese stock market to investigate the relationship between stock price, trading volume, trading quantity, and stock return. Recognizing this reality, the study intends to investigate the relationship between trading volume, stock price, trading quantity, and returns in the Nepalese stock market. Research has addressed the following questions:

- i. What is the position of stock return, trading quantity, trading volume, and trading price volatility of Nepalese enterprises?
- ii. Do there any relationship exists between stock returns, trading volume, trading quantity and trading price volatility of Nepalese enterprises?
- iii. What is the impact of trading volume, trading price and trading quantity on stock returns of Nepalese enterprises?

Objectives of the Study:

The main objective of the study is to measure the relationship between stock return, trading volume, and the trading price of Nepalese commercial banks. The specific objectives of the study are:

- i. To analyze the relationship between trading volume, stock price, trading quantity and stock return of EBL.

- ii. To examine the impact of trading volume, trading price and trading quantity on stock return of EBL.

Hypothesis of the Study

Based on the previous study, the following research questions are observed. The following alternative hypotheses have been observed to test them.

H1a: There is a significant relationship between stock return and trading volume.

H1b: There is a significant relationship between stock return and the trading price.

H1c: There is a significant relationship between trading quantity and stock return.

H1d: There is a significant impact of trading volume of the stock on stock return.

H1e: There is a significant impact of the trading price of the stock on stock return.

H1f: There is a significant impact of the trading quantity of the stock on stock return.

Research Methodology

Research methodology is the overall plan associated with a study. It provides a basic framework on which the study is based. This study is designed to obtain the answer to the research question. The research design employed in this study consists of correlation research and casual comparative research designs have been used to deal with the issue of the study. This study is mainly based on secondary data from the EBL. The daily closing stock prices and trading volume is collected from a trading report published by the Securities Board of Nepal (SEBON) and Nepal Stock Exchange Limited (NEPSE). The population of the study is 26 commercial banks. Out of 26 commercial banks, one bank is selected as a sample for the study. The sample bank is Everest Bank (EBL) for the study. The panel data set has been used to comprise the daily closing prices and trading volume from 2010 January to 2021 december (12 years period). The study examined the 1873 observations of the NEPSE panel data set.

Results

The descriptive statistics

Descriptive statistics is a type of summary statistics that quantitatively explains or summarizes the characteristics of a set of data, whereas descriptive statistics is the process of applying and evaluating such statistics. It also explains the data's qualities.

Table 1

Descriptive Statistics of stock return, trading volume, trading quantity and stock price of EBL

| | N | Minimum | Maximum | Mean | Std. Deviation | C. V. |
|-------------------|------|----------|--------------|------------|----------------|-------|
| Stock Return | 1873 | -117.00 | 764.00 | 4.68 | 56.40 | 12.05 |
| Trading Price | 1873 | 234.00 | 935.00 | 520.52 | 155.68 | 0.30 |
| Trading Volume | 1873 | 11496.00 | 298821622.00 | 6507872.86 | 11031050.43 | 71.79 |
| Trading Frequency | 1873 | 13 | 381177 | 12938.12 | 17657.07 | 13.65 |

Table 1 described the panel set data of 12 years of Everest bank limited. During the period, the minimum return is Rs. -117.00, maximum return is Rs. 764.00 and the average return is Rs. 4.68. The minimum trading price is Rs. 234.00, maximum is Rs. 935.00, and average trading price is Rs. 935.00 during the period. The maximum trading volume is Rs. 298821622.00, minimum is Rs. 11496.00 and average trading volume is Rs. 6507872.86. The maximum trading frequency is 381177, minimum trading frequency is 13, and average trading frequency is 12938.12.

The coefficient of variation of stock return is 12.05. This result shows that there is variation in stock return facing risk during the 12 years period. The coefficient of variation of trading price is 0.30. This shows that there is consistent of stock price during the periods.

Correlation Analysis

This research design can be used to measure the relationship between the variables. This research design used a correlation coefficient to measure the degree of relationship among the variables.

Table 2

Correlation Analysis table of stock return, trading volume and stock price

| | Stock Return | Trading Price | Trading Volume | Trading Frequency |
|-------------------|--------------|---------------|----------------|-------------------|
| Stock Return | 1 | .551* | .786** | .674** |
| Trading Price | | 1 | .527* | -.327 |
| Trading Volume | | | 1 | .544* |
| Trading Frequency | | | | 1 |

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

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

Table 2 shows the correlation matrix between absolute stock returns, trading volume, and trading price. The relationship between stock return and trading volume is significant and positive at 5 percent level. The correlation result of between the stock return and trading volume is significant and positive at 1 percent level. Similarly, there is significant and positive correlation between stock return and trading frequency at 1 percent level. This describes that there is positive and significant relation between the study variables.

Table 3

The correlation analysis is used to test the alternative hypothesis

| Alternative Hypothesis | Decision |
|--|----------|
| H1c: There is a significant relationship between trading quantity and stock return. | Accepted |
| H1b: There is a significant relationship between stock return and the trading price. | Accepted |
| H1c: There is a significant relationship between trading quantity and stock return. | Accepted |

Regression Analysis

The casual comparative research design seeks to find relationships between independent and dependent variables after an action or event has already occurred. It seeks to establish a cause-effect relationship between two or more variables. It can be used to identify the specific model for the analysis of impact and cause of independent variables.

Table 4

Regression Analysis of stock return, trading volume and trading price

| | R | Adj. R2 | Constant | Coff. TP | Coff. TV | Coff. TF | F-Stat | P-Value |
|-------------------|------|---------|----------|----------|----------|----------|--------|---------|
| Model-1 | .596 | .355 | -34.789 | 2.562 | -3.590 | 1.003 | 5.743 | .001 |
| T-Value | | | | -9.985 | 12.806 | -6.326 | | |
| Sig. | | | | .000 | .000 | .000 | | |
| Collinearity(VIF) | | | | 1.421 | 3.119 | .942 | | |

Table 4 examined the effect of trading volume and trading price on the stock return of Agriculture Development bank. Adjusted R-squared is a measure of the proportion of variability explained by the regression. The coefficient of determinants is 0.355 is the variation of dependent variable return is the proportion explained by the independent variables trading volume and price volatility. The trading volume and trading price of 35.54 percent explained and predicted the stock returns. ANOVA table of regression showed F (3, 1869) 5.743, P<.001, indicating that the at-least one predictor’s slope coefficient is statistically significant and the model is fit. The t-value of the constant is significant. The coefficient of trading volume

and trading price is statistically significant. The VIF of all coefficients are less than 10, this showed that there is no colinearity between the independent variables. So, the trading volume and trading price may predict and impact positively on the dependent variable stock returns.

Table 5

The regression analysis is used to test the alternative hypothesis

| Alternative Hypothesis | Decision |
|--|----------|
| H1d: There is a significant impact of trading volume of the stock on stock return. | Accepted |
| H1e: There is a significant impact of the trading price of the stock on stock return. | Accepted |
| H1f: There is a significant impact of the trading quantity of the stock on stock return. | Accepted |

Discussion

Correlation analysis examines the relationship between stock return, trading volume, trading frequency, and trading price volatility of Everest bank limited. The coefficients show that there is a positive and significant relation between stock return, trading volume, trading frequency, trading quantity, and trading price volatility. The positive and significant results of the correlation coefficient are the similar to the previous study of Mestel et al. (2005), Achieng (2013), Boonvorachote and Lakmas (2016), Choudhary, Singh, and Soni (2019), Pan and Misra (2020) and dissimilar result with Godfrey, Granger, and Morgenstern (1964). The impact of trading volume, trading frequency and trading price on stock return is statistically significant and the model is fit. The trading volume and trading price is a significant positive impact on stock returns. These results are similar to the previous study of Pant (2011), Narayan and Reddy (2017), Emenike and Enock (2020) and dissimilar to the previous result of Choudhary, Singh, and Soni (2019).

Conclusion

Descriptive statistics describe the variable features. The CV demonstrates that there is too much volatility in stock returns in Everest bank limited over the study period. The high variation of stock returns indicates that investors may be exposed to a high risk. But, there is consistent in stock price volatility. The investors have achieved a minimal rise in absolute value over the research period. The conclusion of the study is that there is a positive and substantial association between stock returns, trading volume, trading frequency and trading price volatility in the Everest bank limited during 12 years period. The regression models indicated that trading volume, trading frequency and trading price volatility had a substantial influence on stock return. This suggests that the predictor of trading volume and price may accurately anticipate the stock return.

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