CHAPTER II

THEORITICAL BACKGROUND

2.1 Literature Review

2.1.1 Nature of Investment

Investment means the purchase of goods that are not consumed today but are used in the future. Defining the meaning of investment, Bodie et al (2010) revealed that investment referred to a commitment of current resources in the expectation of deriving greater resources in the future. There are many different ways to make an investment by putting money into stocks, bonds, mutual funds, or real estate, or starting a new own business.

Stock, bonds, mutual funds, and other financial securities are traded in capital market. Saunders and Cornett (2012) explained that capital market is markets that trade equity (stocks) and debt (bond) instruments with maturities of more than one year (long-term). The capital market can be an alternative source of financing for company and other institution (e.g. government). Therefore capital market facilitated various investment activities (buying and selling).

Capital market is important for some countries. The benefits of capital market presence are; (1) capital market as sources of funding, (2) capital market as investment vehicle (3) capital market deploy the companies' ownership until the middle layers of society, (4) capital market construct positive circumstance of business, and (5) capital market provides interesting jobs.

In addition, capital market have a major role for economic in some countries, because capital market run two functions; economic and financial function. Capital market was revealed having economic function because capital market allocated the fund between two parties; those who have excess funds (investors) and those who require funds (issuer). Performing financial function, capital market gives probability and opportunity of return for those who have excess fund (investors).

The obtaining return is the goal of investment. Return can be either in the form of capital gains or dividends. Dividend is a payment made by corporation to its shareholders that is proportional distribution of profits to the number of shares owned. Capital gain is the difference between the selling price and the buying price. There are many considerations to make investment decisions in order to achieve optimal level of expected return. Capital gain is formed by the trading activities.

Therefore, obtaining optimal return, investors need information as a based to make investment decisions. Murphy (1999) stated that every investment represents a series of management decisions which must be based on analytical calculation. There are two type of analysis by investors; fundamental analysis and technical analysis.

Fundamental analysis is an evaluating securities method by using intrinsic value as the main consideration to make decisions. Fundamental analysts attempt to study everything that can affect the security's value, including macroeconomic

factors (like the overall economy and industry conditions) and individually specific factors (like the financial condition and management of companies). The end goal of performing fundamental analysis is to produce a value that an investor can compare with the security's current price in hopes of figuring out what sort of position to take with that security (underpriced = buy, overpriced = sell or short). Saunders and Cornett (2012) asserted that underprice (undervalued) is the current price of the stock is less than its fair present value and investor will buy stock in this condition. The other condition, overpriced (overvalued) is the current price is greater than its fair present value and investors will sell the stock.

In other hand, the converse of fundamental analysis, technical analysis is directed towards predicting the price of a security. The price at which a buyer and seller settle a deal is considered to be the one precise figure which synthesis, weighs and finally expresses all factors, rational and irrational, quantifiable and non-quantifiable and is the only figure that counts. The technical analysis provides a simplified and comprehensive picture of what is happening to the stock price. The technical analysis is the study of historical stock prices and stock market behavior to identify recurring patterns in the data.

Technical analyst also used market trend or activity, such as past price and volume to evaluate the performance of securities. The technical analysts predict the future stock price by using trading volume. Darwish (2011) pointed that trading volume have predictive power for future stock price, and vice versa. The

predictive power of trading volume for future stock price, and vice versa will be investigated in this paper.

2.1.2 Market Index

Investopedia site defined that market index is an aggregate value produced by combining stocks or other investment vehicles together and expressing their total values against a base value from a specific date. Market indexes are intended represent an entire stock market and thus track the market's changes over times. Stock market indexes can be as the barometers of the stock market. Stock market indexes reflect the stock market behavior.

Market index is needed for investors. There are six usefulness of market index for investors. First, market index can help to recognize the broad trends in the market. Second, market index can be used as a benchmark for evaluating the investors' portfolio. Third, market index function is as a status report on the general economy. Forth, the investor can use the index to allocate funds rationally among stocks. Fifth, index funds and futures are formulated with the help of the index. Investors who are using technical analysis will pick historical performance of the market index to predict the future movement of the stock market.

Bodie et al (2006) divided three types of stock market index according to the weighting scheme used in their construction. They are price-weighted, value-weighted, and equally weighted index.

1. The price weighted index is an index where the price of each stock receives the same weight. It is constructed as an arithmetic mean of current prices of the stock that constitute the index.
2. The value-weighted index is an index where each stock is given a weight equal to its value. The value of a stock is the market capitalization of the common stocks, as measured by the number of listed shares times the market prices per share.
3. The equally weighted index is an index in which the change of each stock is given the same weight. Sometimes this is referred to as an unweight index. In the construction of an equally weighted index, all stocks carry equal weight regardless of price or market value.

Market index is used to measure return for each stock market in South-East Asia. The following will be explained the index of each country in South-East Asia that is used as the object of this research.

a. Indonesia Stock Market Index

Indonesia Stock Exchange provides information about all indexes. There are two dividing Indexes; Jakarta Composite Index (IHSG), MBX, Kompas100, LQ45, DBX, JII, INFOBANK15, IDX30, Bisnis-37, Pefindo25, Investor33, SMInfra18, SRI-KEHATI, MNC36, and ISSI as constituents based and Consumer, Agriculture, Manufacture, MISC-IND, Mining, Infrastructure, Trade, Finance, Property, and Basic-Ind as sector based. Jakarta Composite Index (JCI) will be used in this research. Jakarta Composite Index

covers movement of both common stock and preference stock listed in Indonesia Stock Exchange. Jakarta Composite Index is an index of all stocks (519 stocks) that are traded on the Indonesia Stock Exchange. (www.idx.co.id).

b. Malaysia Stock Market Index

The Bursa Malaysia index series includes seven benchmark indexes such as Bursa Malaysia KLCI, FTSE Bursa Malaysia mid 70 index, FTSE Bursa Malaysia top 100 index, FTSE Bursa Malaysia small cap index, FTSE Bursa Malaysia fledging index, and FTSE Bursa Malaysia EMAS index. The FTSE Bursa Malaysia index, Kuala Lumpur Composite Index (KLCI), is a major stock market index which tracks the performance of 30 largest companies by full market capitalization listed on the Main Board of the Bursa Malaysia. (www.bursamalaysia.com)

c. Thailand Stock Market Index

FTSE SET Index Series is the result of collaboration between the Stock Exchange of Thailand and FTSE Group – one of the leading index expert in the world. This new series of investible and transparent benchmarks is specially designed to measure the performance of Thai capital market and can be used as a basis for attractive index-linked products that appeal to both local and international investors. FTSE SET Index Series comprises indices segmented as below.

SET Index is a composite index which represents the price movement for all common stocks trading on the SET. The SET Index calculation is adjusted in line with modifications in the values of stocks resulting from changes in the number of stocks due to various events, e.g., public offerings, exercised warrants, conversions of preferred to common shares, in order to eliminate all effects other than price movements from the index. (www.set.or.th)

d. Philippines Stock Market Index

The Philippine Stock Exchange PSEi Index is a capitalization-weighted index composed of stocks representative of the Industrial, Properties, Services, Holding Firms, Financial and Mining & Oil Sectors of the PSE. Philippine Stock Exchange Composite Index (PSEi) is the benchmark measuring the performance of the Philippine stock market. PSEi is the main stock market of the Philippine Stock Exchange. (www.pse.com.ph)

e. Vietnam Stock Market Index

The Hanoi Stock Exchange published several index. The most used index is Hanoi Stock Exchange Index (HNX-Index). The HNX-Index calculates the change in prices of all stocks traded on HNX. During the trading session, HNX-Index will be calculated after any stock transaction is executed. Thus, when the executed price of any transaction changed, the HNX-Index will change as well. The HNX-Index shows the change of prices during the whole trading session. The HNX-Index at the close (at the end of trading day) is calculated basing on closing prices of stocks.

The HNX-Index is calculated since the first day of official trading session of the market. This index calculates the change in prices of all stocks traded on HNX. Calculation method is to compare the current market capitalization to the market capitalization of all listed stocks on the base day (first day of official trading session of the market). Therefore, the value assigned to the base day index is 100. (www.hnx.vn)

2.1.3 Return

Return is important characteristics of investment. Return is the major factor which influences the pattern of investment that is made by the investor. Investor always prefer to high rate of return for their investment. Return is a result or profit which is obtained by shareholder (Hartono, 2003). Return is the change in the value of a portfolio over an evaluation period, including any distributions made from the portfolio during that period (www.investopedia.com). The gain or loss of a security is in a particular period. The return consists of the income and the capital gains relative on an investment. The percentage of return also can be expressed as the sum of the dividend yield and percentage capital gain. It is usually quoted as a percentage. Brealey et al (2001) formulated the percentage of return;

$$\text{The percentage return} = \frac{capital\ gain + dividend}{intial\ \ share\ price}$$

One component of return, a dividend, is a payment made by a corporation to its shareholders, usually as a distribution of profits. When a corporation earns a

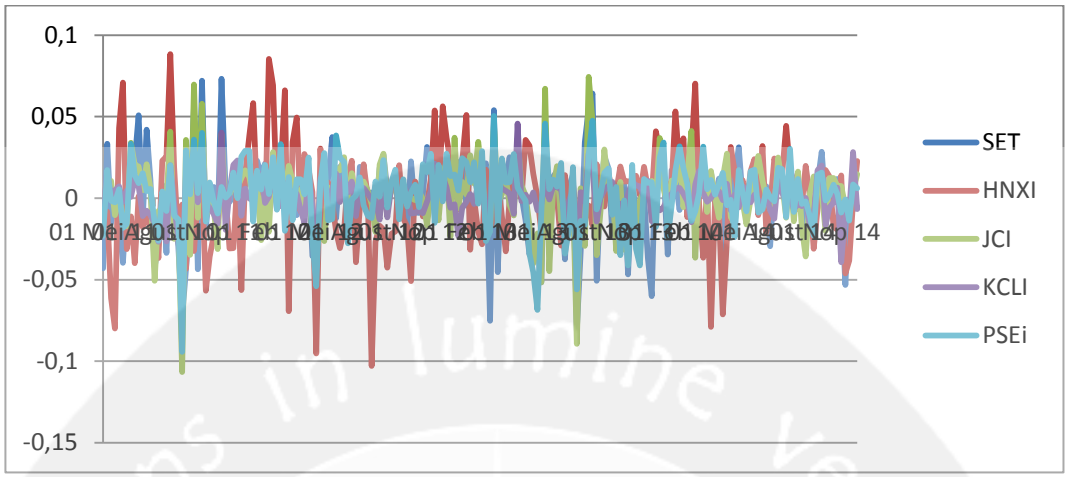
profit or surplus, it can re-invest it in the business (called retained earnings), and pay a fraction of this reinvestment as a dividend to shareholders. Distribution to shareholders can be in cash (usually a deposit into a bank account) or, if the corporation has a dividend reinvestment plan, the amount can be paid by the issue of further shares or share repurchase. Brealey et al (2001) composed formula of dividend as following;

$$\text{Dividend yield} = \frac{dividend}{initial\ share\ price}$$

The other component of return, capital gain, is the differences between buying price and selling price. It is called capital gain if the selling price is higher than buying price. Conversely, if the buying price is higher than selling price, it is called capital loss. Capital gain can be as measurement of investors' success. The formula of the percentage capital gain as following (Brealey et al, 2001);

$$\text{Percentage capital gain} = \frac{Ending\ price - Beginning\ Price}{Beginning\ Price}$$

This formula describes the percentage of capital gain; the differences between ending price and beginning price per beginning price. Beginning price is the price when the investors buy shares. Ending price is the stock price when investors sell the stocks. This formula also will be used in this research. Capital gain will be as a proxy of the return.



Source: www.investing.com

Figure 2.1

Stock Return from the five-countries in South-East Asian Market

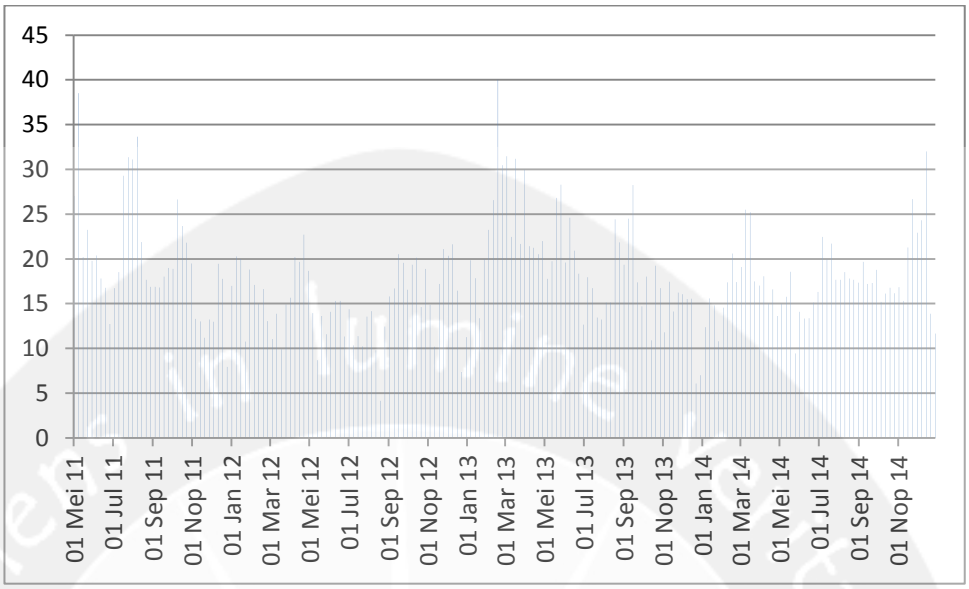
The return movement from South-East Asian market has similar pattern each other. Vietnam is one of stock market which has different movement in period time. The contradictory movement of Vietnam happened in May – June 2011, along 2012, January 2013, and March – May 2014. Vietnam stock market index move up sharply, while the others are not. The period of high volatility of Vietnam stock market return is followed by period of high volatility for prolonged period during year 2012.

2.1.4 Trading Volume

According to Investopedia website, volume is the number of shares traded in a stock for a given period, typically for one day. It also means the daily number of shares of a security that change hands between a buyer and a seller. Trading volume is done by the market exchange and reported via financial website.

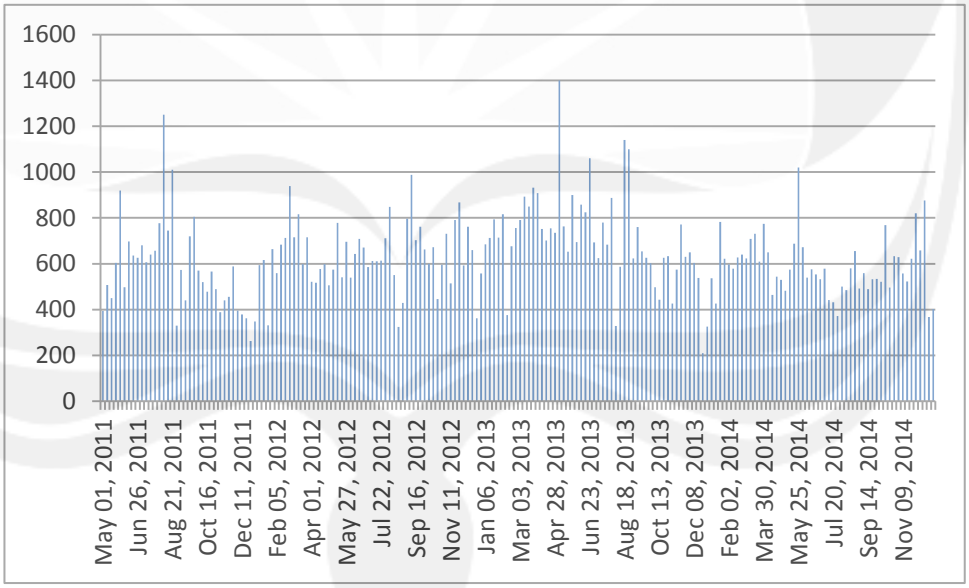
Trading volume is needed for investor as important information to make investment decision. Saunders and Cornett (2012) stated that stock reflect information about the firm and that affect firm value, called market efficiency.

Lee and Swaminathan (2000) concluded that the past trading volume provide valuable information about security. Mestel et al (2003) agreed that trading volume changes mainly reflect the available set relevant information on the market. Investors' expectation always leads to an increase in trading volume which therefore reflects the sum investors' reaction to news Odean (1999) explained that trading volume increases when price takers, insiders, or market makers are overconfident. This is the most robust effect of overconfident. There are many reasons why traders pay attention to trading volume. The low volume means that the stock market is illiquid. Whereas, the high trading volume defined that the market is highly liquid (Al-Jafari and Tliti, 2013). Higher volume for a stock is an indicator of higher liquidity. For institutional investors who wish to sell a large number of shares of a certain stock, lower volume will force them to sell the stock slowly over a longer period of time.



Source: www.investing.com

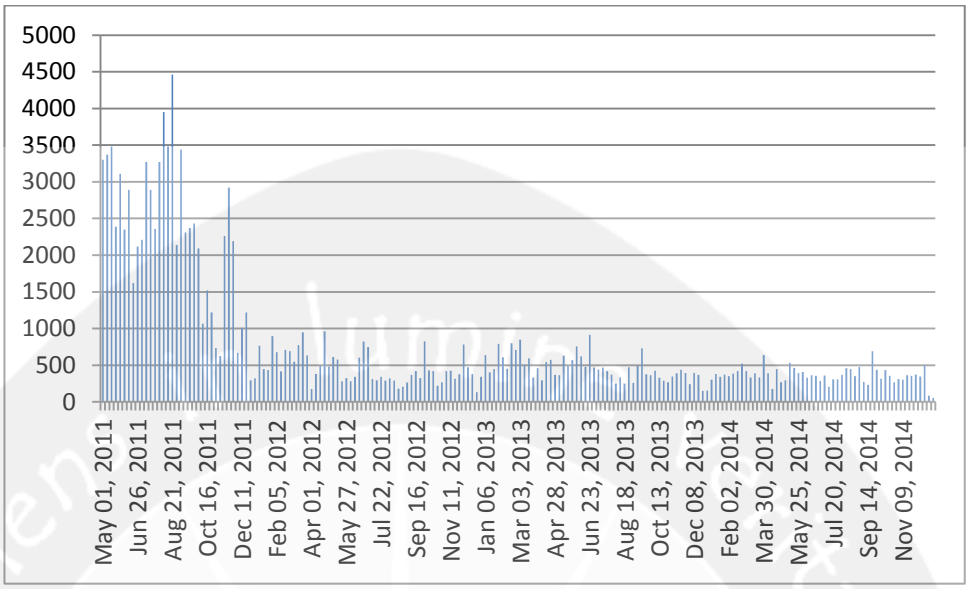
Figure 2.2
Trading Volume in Indonesia Stock Market



Source: www.investing.com

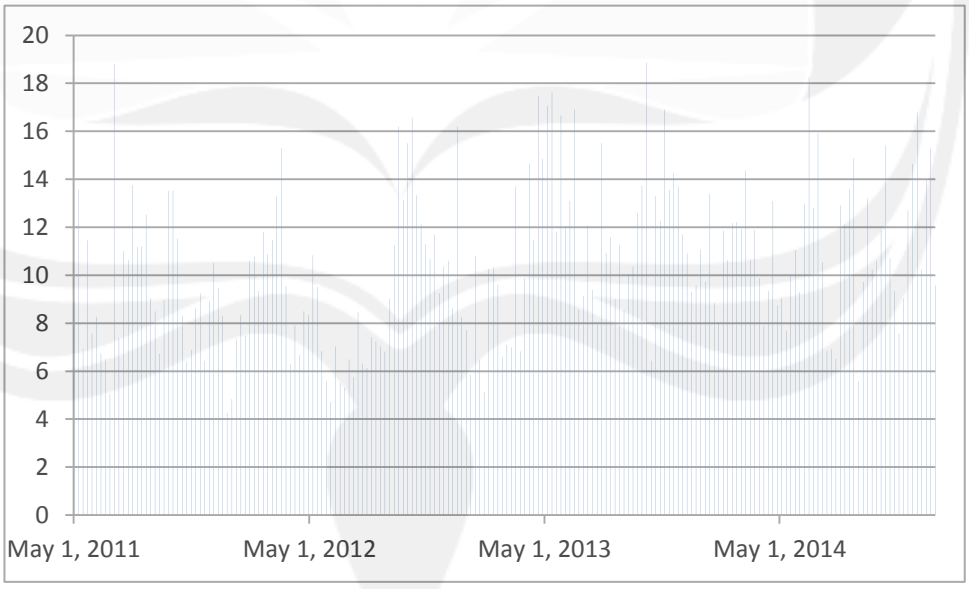
Figure 2.3

Trading Volume in Malaysia Stock Market



Source: www.investing.com

Figure 2.4
Trading Volume in Philippines Stock Market



Source: www.investing.com

Figure 2.5
Trading Volume in Thailand Stock Market

Source: www.investing.com

Figure 2.6
Trading Volume in Vietnam Stock Market

The lowest trading volume of Indonesia Stock Exchange is in August 2012 with 4.13 billion shares traded, whereas the highest trading volume of Indonesia Stock Exchange is in of February 2013 with 40.01 billion shares traded. The average trading volume is 17.96 billion shares and the total trading volume is 3449.34 billion shares during period.

The trading volume in Malaysia stock market (shows figure 2.3) have similar pattern with trading volume in Indonesia stock market. The trading volume in Malaysia stock market is still lower than trading volume in Indonesia stock market. The lowest and highest trading volume is 210.31 and 1400 million shares traded.

The trading volume in Philippines stock market has high numbers of shares traded in year 2011 (see figure 2.4). In that year, Philippines stock market reaches the highest trading volume with 4.46 billion shares traded. The number of shares traded decreases up to the ending of the year 2011. Then trading volume has no significant movement. The trading volume goes down to the lowest level in around 54.24 thousand shares traded.

Thailand stock market have a large number of shares traded which is happened three times during period (sees figure 2.5). It happened in July 2011, trading volume reach 18.79 billion shares traded as the highest. The others happened is in April 2013 with 17.47 billion shares and in October 2014 with 18.26 billion shares traded in stock market.

The trading volume of Vietnam stock exchange is the lowest number shares traded in South-East Asia market. It is similar as Thailand stock market. The trading volume of Vietnam stock exchange move semi-seasonally. The high shares traded happened in every beginning of the year. In March 2012 and February 2013, trading volume reach 507.75 and 504.48 thousand shares traded. The highest trading volume is 662.89 thousand shares traded in March 2014.

2.1.5 Volatility

Marušiaková (2006) described that volatility is spread of all likely of an uncertain variable. The price series or an economic indicator that changes a lot and swings wildly is said to be volatile. Volatility is the most important of uncertain parameters. Volatility measures variability or dispersion about a central

tendency. It is a measurement of the degree of price movement in the stock, futures contract, or any other market. Measuring and forecasting volatility of asset returns is vital for risk management.

Volatility means the standard deviation of the rate of returns on an asset. The asset will be a company's stock or a share price index. Poon and Granger (2003) computed volatility from a set of observations as

$$\sigma = \sqrt{\frac{1}{T-1} \sum_{t=1}^{T} (R_t - \mu)^2}$$

where;

σ = volatility or standard deviation

R_t = return on day t

μ = average return over the T-day period

It is interesting to examine the volatility of emerging stock market. According to Aggarwal et al (2005), it is well known that emerging stocks markets are characterized by high volatility. In this paper, researcher investigates South-East Asian stock market as object. South-East Asian stock markets consist of Indonesia, Malaysia, Singapore, Thailand, Philippine, and Vietnam. Most of South-East Asian countries are developing country. Only Singapore has become developed country.

Stock market with high volatility means that the value of security can potentially change in the large range. This means that the stock price or index can change significantly over a short time period. In other hand, the low volatility means that the movement of stock price or index does not change rapidly.

2.1.6 Trading Volume and Stock Return Relationship

Trading volume is containing useful information which is needed to make investment decision. One of Wall Street adage state that "It takes volume to make prices move". Trading volume is containing information about transaction which is happened in period time. The transaction can be selling or buying.

As economist point of view, the change of price is caused by supply and demand. This idea can be applied in stock market. The changing of stock price is happened because the change of demand and supply of the company. If more people want to buy stock (demand) than sell it (supply), then stock price will rises up. Conversely, if more people want to sell a stock than its demand, the stock price will fall down. Therefore, it can be concluded that trading volume have impact to stock return.

In addition, the change of stock return is responded by investors. If the stock price decreases, investors are willing to buy the stock in hope will have return when the stock price up. If investors have stock with high price (overvalued), investors will sell the stock in order to get current return. It explained that the change of return have impact to trading volume.

There are bidirectional relationship between stock return and trading volume. Trading volume has impact to stock return. On the contrary, the stock markets have impact to trading volume. Thus, there is causal relationship between stock return and trading volume.

2.2 Previous Research

Numerous studies have same purposes with this research. There are some previous research analyzing the relationship among stock market return, trading volume, and volatility. The result of previous research can be difference each other. It can happen because previous research used difference analysis method or the object of the research.

Research written by Chiang, T.C. and Doong SC (2001) investigated the time-series behavior of stock returns for seven Asian stock markets; Hong Kong, Korea, Malaysia, Philippine, Singapore, Taiwan, Japan, Thailand, and United State. In many cases, the higher average returns appear to be associated with a higher level of volatility. Testing the relationship between stock returns and unexpected volatility, the evidence shows that four out of seven Asian stock markets have significant. The four out of seven Asian stock markets are Hongkong, Taiwan, Singapore, and Malaysia by using Treshold Auto-Regressive GARCH (TAR-GARCH).

Similar regression models using TAR-GARCH, Oral (2012) applied Stable Treshold GARCH (TGARCH) on the Istanbul Stock Exchange National-100 Index with the purpose of analyzing the relationships between the volatility of stock returns and the trading. The investigation focused on this relationship by assuming the Student's t and Stable distributions for innovations. Then, the results also indicate that the trading volume significantly contributes to the volatility, and indicate the strong leverage effects on volatility. The goodness of fit supports the use of TGARCH over GARCH specifications.

Assan A. and Thomas S. (2013) analyzed whether the size has any effect on stock return-volume relationship. The study examines the dynamic relationship between returns and trading volume. They also examines the durations of impact of stock returns on trading volume and trading volume on stock returns and the impact of size on stock returns relationship. The study employed the VAR (Vector Auto-Regression) for the analysis along with Granger Causality/Block Exogeneity Wald Tests, impulse response function and variance decomposition analysis. The study shows that Indian stock market more efficient after the subprime crisis. It means that Indian stock market has become less predictable after crisis.

Choi et al (2012) investigated the relationship between returns volatility and trading volume as a proxy for arrival of information to the market, based on Korean Stock Market (KSM). Data were taken from January 2000 to December 2010. They measured the relationship between return volatility and trading volume employing the GJR-GARCH and exponential GARCH (EGARCH) models. In the result, positive relationship between return volatility and trading were founded, concluding that trading volume is a useful tool for predicting the volatility of the KSM.

Mubarik and Javid (2009) investigated the relationship trading volume and returns and volatility of Pakistani market for the period of July 1998 to October 2008. Using Granger Causality test, individual stock returns indicated for more stocks' returns causing volume than volume causing returns. There is significance effect of previous day trading volume on current return. In other hand, the previous day returns and volume could explain the current market returns. The

significant autoregressive process showing in the GARCH-M model indicated that a firm relationship of volume with the future paths of returns.

Kiymaz and Girard (2009) investigated the relationship returns and trading volume. They used daily data for 30 stocks that is included in the Istanbul Stock Exchange National-30 index. The study applied GARCH model because GARCH model was an appropriate model to mimic the conditionality of the second moment. The study found that trading volume does not convey all the information associated with trading volume and that most information release is predictable.

Darwish (2011) examined the contemporaneous and causal relationship between trading volume and return in the Palestine Stock Exchange. The research applied GARCH (1,1) model to test existence of the positive contemporaneous relationship by using weekly trading volume and returns over the period from October 2000 to August 2010. Granger causality tests also confirmed that the trading volume have predictive power for future returns, and vice versa. Trading volume is useful for prediction of stock price, and vice versa.

The empirical study by Asghar (2011) examined the relationship stock returns and trading volume in Pakistan. Trading volume captures the important information contained in the traders' information signal and may be useful in interpreting information of prices. The study applied correlogram, unit root (Augmented Dickey Fuller) test and Vector Auto Regression (VAR) Model and used 5-years daily stock prices and trading volume data. The research shows that there was positive relationship between the stock returns and trading volumes in the Pakistan.

The empirical study by Habib (2011) also examined the relationship between stock returns and trading volume in Egyptian Stock Exchange (ESE). Using data over period 1998 – 2005, the study provide three conclusions. First, trading volume has little role to play in forecasting the future stock return volatility. Second, it is about predictability of returns that there is no relation between volume and first autocorrelation of stock returns. Last, the Granger causality test indicates a bidirectional causal relation between volume and volatility.

Table 2.1 Summary of Previous Research

Title (Researcher, Year)	**Variables**	**Analysis Method**	**Result**
Empirical Analysis of Stock Returns and Volatility: Evidence from Seven Asian Stock Markets Based on TAR-GARCH Model (Chiang and Doong, 2001)	1. Excess Returns 2. Expected volatility of stocks returns	Threshold Autoregressive GARCH	Four out of the seven Asian stock markets have a significant relationship between stock returns and unexpected volatility
An empirical analysis of trading volume and return volatility relationship on Istanbul stock exchange national - 100 Index (Oral, 2012)	1. Stock Return 2. Trading Volume	Stable TGARCH	The results indicate that the trading volume significantly contributes to the volatility, and indicate the strong leverage effects on volatility. The goodness of fit supports the use of TGARCH over GARCH specifications.

Table 2.1 continued

Title (Researcher, Year)	Variables	Analysis Method	Result
Stock returns and trading volume: does the size matter? (Assan A. and Thomas S., 2013)	Stock returns and trading volume in Indian Stock Market	1. VAR (Vector Auto-Regression) 2. GCBEW (Granger Causality/ Block Exogeneity Wald tests)	The study has identified that the size has a considerable impact on price-trading volume relationship. Nifty and Nifty Junior have shown a unidirectional causality from returns to volume. The duration of impact is prominent when the size decreases and for large cap stocks it is insignificant.
Relationship between Trading Volume and Asymmetric Volatility in the Korean Stock Market (Choi et al., 2012)	Return volatility and trading volume as a proxy arrival of information to the market based on Korean stock market (KSM)	1. GJR-GARCH 2. Exponential GARCH (EGARCH)	Trading volume is a useful tool for predicting the volatility dynamics of the KSM.
Relationship between Stock Return, Trading Volume, and Volatility: Evidence from Pakistani Stock Market (Mubarik and Javid, 2009)	Stock return, trading volume, return volatility	1. ARCH 2. GARCH-M models	The results of Granger Causality test suggest that there is feedback relationship between market return and trading volume. There is significant interaction between trading volume and return volatility when volume is entered into variance equation of GARCH-M model.
Stock Market Volatility and Trading Volume: An Emerging Market Experience (Kiymaz and Girard, 2009)	Daily return and trading volume for 30 stocks in the Istanbul National-30 index	GARCH model	Unexpected news does not affect volatility significantly, but the ability to forecast of volume activity is very high

Table 2.1 continued

Title (Researcher, Year)	Variables	Analysis Method	Result
Testing the Contemporaneous and Causal Relationship between Trading Volume and Return in the Palestine Exchange (Darwish, 2011)	Return and trading volume in the Palestine Exchange	1. Granger Causality 2. GARCH (1,1)	Granger causality tests also confirmed that volume added a predictive power for future returns in presence of current and past returns, and vice versa. It is concluded that the past information of trading volume is useful for prediction of stock price, and vice versa.
The empirical relationship between stock returns and trading volume in Pakistan (2000 – 2006) (Asghar, 2011)	Stock returns and trading volume in Pakistan	Vector Auto-Regression (VAR) Analysis	There is no negative relationship in any lag and over all the relationship is positive between stock returns and trading volume. The study proves that the stock returns and the trading volume may effect on the future prediction of each other.
Trade Volume and Returns in Emerging Stock Markets An Empirical Study: The Egyptian Market (Habib, 2011)	Stock returns and trading volume in the Egyptian Securities Exchange (ESE)	1. Ordinary Least Square (OLS) 2. GARCH	The main conclusion is that lagged stock trading has little role to play in forecasting the future return volatility. The second finding of the paper relates to the predictability of returns. Third the Granger causality tests indicate a bidirectional causal relation between volume and volatility.

Source: some e-journals

2.3 Hypothesis Development

Previous researches have done analyzing the causality relationship between stock market returns, trading volume, and volatility. The empirical analysis by Chiang and Doong (2001) and Oral (2012) proved that there is a significant relationship between stock return and volatility. The research by Habib (2011), Choi et al (2012), Kiymaz and Girard (2009), and Asghar (2011) is resulting that trading volume have predictive power to predict or forecast future return volatility. The Granger causality test by Mubarik and Javid (2009) and Darwish (2011) concluded that there is significant interaction between trading volume and stock market return. The Granger causality test indicates a bidirectional causal relation between trading volume and volatility. The trading volume is useful for prediction stock price, and vice versa. From these previous researches, hypothesis can be formulated as the following:

H_1 = There is causal and dynamic relationship among stock market returns, trading volume, and volatility in South-East Asia market period of 2011-2014