CHAPTER II

THEORETICAL BACKGROUND

2.1 Literature Review

2.1.1 The Meaning of Capital Market

Capital market is a means of financing for companies and other institutions (eg government) and means for investment activities. Until now the definition of capital market itself still vary from one source to another. Here are some theories regarding capital market:

1. According to Ang (1997), capital market is an economic instrument that has experienced very rapid growth (Ang, 1997). Capital market is an indicator of economic progress of one country and support the economy of the country concerned.
2. Tandelilin (2001) describes capital market as an intermediary institution that has an important role in supporting the economy because the capital market can connect the parties who have excess funds with parties who need funds. In addition, the capital market can also encourage the creation of an efficient allocation of funds, because with the capital market investors can choose the investment alternative that provides the most optimal return. There are several

instruments sold in the capital market, such as, stocks, bonds, mutual funds, and derivative instruments.

3. According to Mary et al. (2012), states that the capital market comprises the complex of institution and mechanism through which intermediate term funds and long-term funds are pooled and made available to business, government, and individual. So, in capital market the party that is involve in here can be in the term of individual, group, organization, or even the government. It also asserted that the capital market comprises the process by which securities already outstanding are transferred and it ensures liquidity as it provides market for both new and old securities

Capital market has two forms, namely primary market and secondary market. Primary market occurs when issuers sell their securities to general investors for the first time. In the primary market, the company will obtain the necessary funds. After the securities of the issuer are sold in the primary market, then the securities of the issuer can then be traded by and among investors in the secondary market. Secondary market is the place of the sale and purchase of shares among investors. Transactions made by investors in the secondary market will not provide additional funds for companies issuing securities (issuers), because transactions only occur between investors, not with the company.

The Indonesian capital market is organized by the Indonesia Stock Exchange. Trading activities on the Indonesia Stock Exchange are held on Monday to Friday and trading activities are divided into two sessions, ie morning and afternoon sessions. The morning session on Monday's trading activity until Thursday is held from 09.30 WIB until 12.00 WIB and the afternoon session starts at 13.30 WIB until 16.00 WIB. While the morning session for trading activity on Friday at 09.30 WIB until 11.30 WIB and the afternoon session starts at 14.00 WIB until 16.00 WIB.

2.1.2 Stock

Ang (1997) states that stocks are securities as evidence of inclusion or ownership of individuals or institutions within a company. The meaning of securities is something that has value and certainly can be traded. Value of stocks based on its function can be divided into three types, namely (Ang, 1997):

1. Par Value. The par value of a share is the value listed on the relevant shares that serves for accounting purposes.
2. Base Price. The base price of a new stock is the initial price, so the base value is the result of multiplication between the base price and the number of shares issued.
3. Market price. The market price is the most easily determined price because the market price is the price of a share in the ongoing market, so this is the market price that states the rise and fall of a stock. If the market price is multiplied by the number of shares issued then the market value will be obtained.

The percentage of ownership is determined by the large percentage of total shares to the total shares of the company. A person who owns a company's stock can be said to be the owner of the company even if the person has only a few shares.

Shareholders have rights and responsibilities as well as a company owner. They have the right to determine the direction of the company through the General Meeting of Shareholders (GMS). Surely their rights are limited by the percentage of the number of shares they have due to the enactment of the principle of "one share one vote".

There are two advantages obtained by investors by buying or owning shares, namely dividend yield and capital gains. Dividend yields are part of the corporate profits distributed to shareholders. Capital gain is obtained from the difference between the purchase price and the selling price. In addition to having a profit, the stock also has a risk called capital loss, a condition where investors sell shares lower than the purchase price. There is also a risk of liquidation, a condition in which the company whose shares are owned, is declared bankrupt.

2.1.3 Stock Price Index

Stock prices are heavily influenced by demand and supply in the capital market. Stock price movements can be seen from the stock price index. Stock price index is the main indicator that describes stock price movement (Darmadji and Fakhruddin, 2001). The movement of stock price index numbers becomes an important

indicator for investors to determine if they want to sell, hold, or buy one or more shares. Therefore, it is necessary to know the various index numbers that exist in IDX, namely:

1. Jakarta Composite Index (JCI/IHSG). The JCI was introduced on 1 April 1983 as the indicator of the prices movement of all stocks listed in the IDX, both for the regular and preferred stocks. August 10, 1982 set as the base date with a base index value of 100 (IDX Fact Book, 2017).
2. Individual Index. This index is an indicator of changes in individual stock price compares to its initial offering price. Every single stock has an individual index of 100 when it was initially listed at the IDX (IDX Fact Book, 2017).
3. Sector Indexes Family. This index was introduced on 2 January 1996 with the base index value of 100 for each sector and use the base date of 28 December 1995. IDX' Sector Indexes family comprise 9 sector indexes and 1 supersector index classified by Jakarta Stock Exchange Industrial Classification (JASICA). There are 9 sector indexes, namely Agriculture; Mining; Basic Industry and Chemicals; Miscellaneous Industry; Consumer Goods Industry; Property, Real Estate and Building Construction; Infrastructure, Utilities and Transportation; Finance; Trade, Services and Investment. IDX also calculates the Manufacturing Index which represents the manufacture supersector which include all stocks classified into Basic Industry and Chemicals sector, Miscellaneous Industry sector and Consumer Goods Industry sector (IDX Fact Book, 2017).

4. LQ45 Index. LQ45 Index was established to provide the market with an index that represents 45 of the most liquid stocks. Until now, the LQ45 Index covers at least 70% of the stock market capitalization and transaction values in the Regular Market. The based date for the calculation of LQ45 Index is July 13, 1994, with a base value of 100. IDX always checks the performance of the component stocks included in the LQ45 Index. Replacement stock in the LQ45 Index will be conducted at the beginning of February and August. The requirements for a stock to be included in the LQ45 Index:
    a. The stocks have been listed at the IDX for at least 3 months.
    b. The performance of the stock in the regular market, which includes its trading value, volume, and frequency of transactions.
    c. The number of trading days in the regular market. The stock's market capitalization at a certain time period.
    d. The stocks selection for LQ45 Index is also based on the financial condition and the prospect of growth of the companies (IDX Fact Book, 2017).
5. Jakarta Islamic Index (JII). On 3 July 2000, IDX and PT Danareksa Investment Management join together to launch the Jakarta Islamic Index (JII). The base date of the index is 2 January 1995 with a base value of 100. Jakarta Islamic Index is an index consisting of 30 shares based on Islamic Law. Jakarta Islamic Index was established to provide the market with a list of stocks that are in line with the Islamic Sharia investment guidelines. IDX will reviews this index every six

months, adjusting to the issuance of List of Sharia Securities issuance by OJK. (IDX Fact Book, 2017).

6. KOMPAS100 Index. KOMPAS100 Index launched under cooperation between Indonesia Stock Exchange and KOMPAS daily newspaper. The calculation of KOMPAS100 is started on base date of 2 January 2002 with a base value of 100. KOMPAS100 Index will be changed every six months or every February and August (IDX Fact Book, 2017).

2.1.4 Stock Price Volatility

Volatility is a statistical measurement for price fluctuations over a given period. The measure shows decreases and price increases in a short period and does not measure the price level, but the degree of variation from one period to the next. Given that volatility can be represented by standard deviation, the public also perceives volatility as a risk. The higher the level of volatility, the higher the level of uncertainty of the stock returns that can be obtained.

The volatility of stock prices occurs due to the arrival of new information into the market. As a result, market participants reassess the assets they trade. In an efficient market, the price level will adjust quickly so that the price formed reflects the new information.

Stock price movements are constantly changing and this is in line with the Random Walk theory which states that stock prices in the past and the direction of stock or market prices as a whole can not be used as a tool to forecast future stock price movements. Therefore, stock prices move randomly and can not be predicted.

Opportunities to rise equals opportunities to descend, but in the long run, stock prices will tend to increase. In other words, this theory states that stock prices move randomly and can not be predicted, so it is unlikely that an investor can earn returns beyond market returns without taking on more risks.

2.1.5 Trading Volume

The performance of a stock can be measured by its trading volume. The more often the stock is traded indicates that the stock is active and in demand by investors. Trading volume is the number of shares of a company that is traded within a certain time.

Stock trading volume is the total value of buy and sell transactions of shares by investors in the currency. These trading volumes are often used as benchmarks to learn information and the impact of events. The volatility effect of trading activity on expected stock return is driven by the element of risk and variability in liquidity so that stocks with high variability have high expected return too (Chordia, 2001).

Trading volume activity is used to see the assessment of an info by an investor to make a trade decision or not. The small volume of trade shows investors less interested in investing in the secondary market, while large volumes indicate that many investors are interested in buying and selling shares.

Small trading volumes can be a sign of uncertainty from investors in the future. On the other hand, an increase in stock trading occurs because investors have different interpretations of an announcement.

2.1.6 The Relationship between Volatility and Trading Volume

Schwert (1989) states that there are at least three theories that predict a positive relation between volatility and volume:

1. If investors have heterogeneous beliefs, new information will cause both price changes and trading.
2. If some investors use price movements as information on which to make trading decisions, large price movements will cause large trading volume.
3. If there is short-term "price pressure" due to illiquidity in secondary trading markets, large trading volume that is predominantly either buy or sell orders will cause price movements.

2.2 Previous Research

There are some research that has previously been done by other researchers, they are:

1. The research that is done by Belhaj and Abaoub (2015) with the title of A Generalized Autoregressive Conditional Heteroskedasticity Examination of the Relationship between Trading Volume and Conditional Volatility in the Tunisian Stock Market: Evidence for the Information Flow Paradigm. The variables in this research are trading volume and returns conditional volatility. This research is held in January 2, 2008 to June 29, 2012 in 43 most active and dynamic stocks on the Tunisian Stock Market. The results may be summarized as follows. Firstly,

the authors confirm the strong positive relationship between trading volume and returns conditional volatility issued from GARCH (1,1) model. Secondly, the authors show that including contemporaneous trading volume in the conditional variance equation significantly reduces volatility persistence. Thirdly, the authors show that volatility persistence remains in the whole at a high level and close to that obtained from the GARCH (1,1) model without trading volume, and also at a higher level than that resulting from the addition of the contemporaneous volume. (International Journal of Economics and Financial Issues Vol 5, Issue 2, 2015).

2. The research that is done by Singh (2015) with the title of The Empirical Investigation of Relationship between Return, Volume & Volatility in Indian Stock Market. The variables in this research are return, volume, and volatility. This research is held in January 2007 to March 2014 on the NIFTY Index of National Stock Exchange. The results show that ARCH family models outperform the conventional OLS models. The author find that, the TARCH model is better fit, when we compare the GARCH, EGARCH and TARCH models, on the basis of AIC and SC criteria. The findings of granger causality test records the evidence of one way causality from volatility to trading volume and from return to volume. (IPE Journal of Management Volume 5, No.2, July-December 2015).

3. The research that is done by Naik, Gupta, and Padhi (2018) with the title The Relationship Between Stock Market Volatility And Trading Volume: Evidence From South Africa. The variables in this research are trading volume and volatility. This research is held in 6th July 2006 to 31st August 2016 on the Johannesburg Stock Exchange (JSE). The results may be summarized as follows. First, the authors confirm that the Johannesburg Stock Exchange exhibits volatility asymmetry implying that equity market volatility responds more quickly to the bad news or negative shocks rather than to the good news or positive shocks. Second, it was found that the contemporaneous trading volume has a positive and statistically significant impact on equity return volatility implying that trading volume may be one of the important factors in explaining volatility. Third, the Granger causality results indicates that these is a bi-directional relationship between trading volume and volatility only for the sub-sample i.e. sample considered after the sub-prime crisis (The Journal of Developing Areas Volume 52 No. 1 Winter 2018).

Table 1
Summary of Previous Research

Author and Journal Name	Research Title	Result
Belhaj and Abaoub (2015)	A Generalized Autoregressive Conditional Heteroskedasticity Examination of the Relationship between Trading Volume and Conditional Volatility in the Tunisian Stock Market: Evidence for the Information Flow Paradigm.	First, strong positive relationship between trading volume and returns conditional volatility issued from GARCH (1,1) model. Second, including contemporaneous trading volume in the conditional variance equation significantly reduces volatility persistence. Last, Volatility persistence remains in the whole at a high level and close to that obtained from the GARCH (1,1) model without trading volume, and also at a higher level than that resulting from the addition of the contemporaneous volume
Singh (2015)	The Empirical Investigation of Relationship between Return, Volume & Volatility in Indian Stock Market. The variables in this research are return, volume, and volatility.	The TARCH model is better fit, when we compare the GARCH, EGARCH and TARCH models, on the basis of AIC and SC criteria. The findings of granger causality test records the evidence of one way causality from volatility to trading volume and from return to volume.
Naik, Gupta, and Padhi (2018)	The Relationship Between Stock Market Volatility And Trading Volume: Evidence From South Africa.	JSE exhibits volatility asymmetry implying that equity market volatility responds more quickly to the bad news or negative shocks rather than to the good news or positive shocks. Then, the contemporaneous trading volume has a positive and statistically significant impact on equity return volatility implying that trading volume may be one of the important factors in explaining volatility. Last, Granger causality results indicates that these is a bi-directional relationship between trading volume and volatility only for the sub-sample i.e. sample considered after the sub-prime crisis.

Source: Various Journal

2.3 Hypothesis Development

Belhaj and Abaoub (2015) study the volume-volatility relationship on the Tunisian Stock Market using a GARCH (1,1). The results show the existence of a strong positive relationship between trading volume and conditional volatility of returns. Their results thus do not support the implications of the SIAH assuming that information dissemination is sequential and that the gradual reaction of traders to its arrival makes lagged volume informative and therefore, conditional volatility persistence is substantially absorbed by the volume effect. While Singh (2015), records the evidence of one way causality from volatility to trading volume, which contradicts the mixture of distributions hypothesis and supports the sequential information arrival hypothesis. This implies that the strong form of market efficiency does not hold since some private information exists that is not reflected in stock prices. The results also detects one-way causality from return to volume that is indicative of noise trading model of return volume interaction in this market.

Naik, Gupta, and Padhi (2018) examined the empirical relationship between trading volume and volatility dynamics using daily data of closing prices and trading volumes of Johannesburg Stock Exchange. There are three results. First, the Johannesburg Stock Exchange exhibits volatility asymmetry implying that equity market volatility responds more quickly to the bad news or negative shocks rather than to the good news or positive shocks. Second, the contemporaneous trading volume has a positive and statistically significant impact on equity return volatility implying that

trading volume may be one of the important factors in explaining volatility. This supports the validity of mixture of distribution hypothesis (MDH). Third, the Granger causality results indicates that these is a bi-directional relationship between trading volume and volatility only for the sub-sample.

Based on the literature review and theoretical foundation above, then the following hypothesis is framed:

H_1: There is dynamic and causal relationship between stock market volatility and trading volume in Indonesian stock market from February 2013 to February 2018.