

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

This chapter outlines the market efficiency theory and event studies, the review of some previous researches about semi-strong market efficiency and stock split, and the last will be hypotheses development of this study.

2.2 Capital Market or Stock Market

Capital market or stock market is the place where supplier of funds (public) and user of funds (corporation) do transaction. In capital market transaction, companies will get equity funds from public as a source of financing, in addition to debt financing or retained earnings financing while public will get a specific proportion of ownership rights which is known as shares after investing some money, also payment from companies namely dividend.

Any movement of a corporate stock is reported in the capital market. Public can access the information through capital market's websites and other forms of media (i.e. television, radio, etc.). Stock market is often used as predictors of economic activity and performance, so it is important to tell any movement of companies or capital market to public as soon as the event is planned. The announcement of particular event usually affects stock prices. If stock prices

adjust immediately after a particular event announcement, then the market can be said as efficient.

2.3 Theoretical Review of Efficient Market Hypothesis

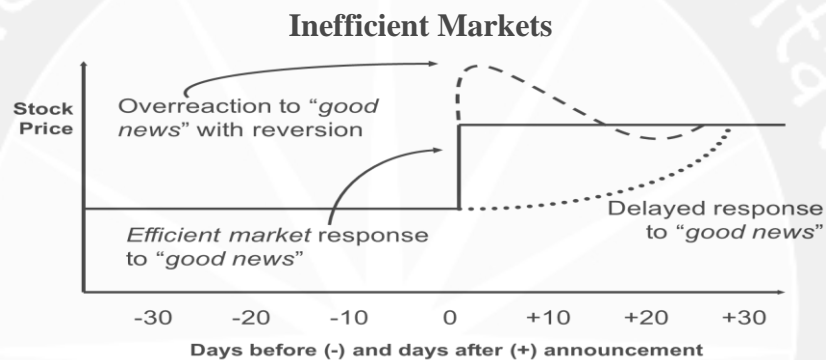
Efficient Market Hypothesis (EMH) is one important part of modern finance. The theory of Efficient Market Hypothesis was developed by Eugene Fama in 1970. According to Fama (1970), a market is defined as efficient when current stock price fully reflects available information about the company. Fama argued that a capital market will be efficient if nobody, include intelligent investors and insiders, cannot get return higher than average market return (also known as abnormal return), even after considering the risk and strategy used to gain profit. Since all information is reflected in the stock prices, then it is difficult for investors to have a capital gain while trading in an efficient capital market.

In studying the concept of efficient market, our attention will focus on what extent and how quickly the information can affect market, which reflected in the securities price. Related to this case, as cited in Arman, Agus (2014), Haugen (2001) divides three groups of information, they are (1) information in past stock prices, (2) all public information, and (3) all available information including inside or private information. Each group of information reflects to what extent the efficiency of a market.

Efficient market has different reaction compared to inefficient market when there is a new information. Stock price in efficient market will adjust immediately

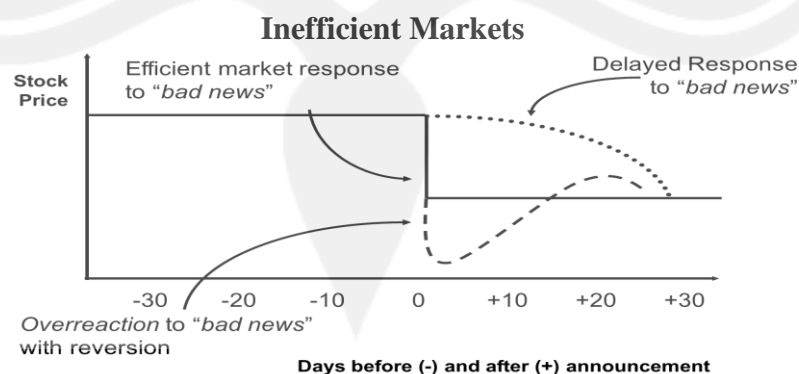
after new information released while stock price in inefficient market will adjust after few moments. In inefficient market, there are two types of reaction named overreaction and delayed response. Overreaction means stock price will over adjusts to new information. In other side, delayed response means stock price will adjusts slowly to new information, it can be 30 days elapse before the price completely reflects the new information.

Figure 1: Reaction of Stock Price to New Good Information in Efficient and



Source: Ross, S.A. et al., (2010). Corporate Finance pg. 431

Figure 2: Reaction of Stock Price to New Bad Information in Efficient and



Source: Ross, S.A. et al., (2010). Corporate Finance pg. 431 with modification

2.3.1 Requirements of Market Efficiency

Fama (1970) defines several market conditions that can help or hinder price adjustment after new information has released. These conditions should be fulfilled before a market called as efficient. The conditions are as follows:

1. Investors can interpret information well because securities price are affected by the demand and supply made by investors, and one investor cannot affect securities price by himself
2. All available information is free for all market participants at the same time
3. Information is released randomly so investors would not know when there will be new information from companies
4. Investors react quickly and fully to new information released so reflects on securities prices immediately.

Fama (1970) assumes that the market is efficient when there are sufficient numbers of investors who are ready to access the available information. In other words, market will be efficient if investors have the same level of knowledge so information available would not be ambiguous.

2.3.2 Forms of Efficient Market

Fama (1970) classifies three forms of capital market efficiency based on type of information as follows:

1. Weak-form efficiency, where securities prices fully reflect all historical information. In this form of efficiency, no one can use past price changes or historical prices to predict current price because prices are following random form. Besides that, all historical information are known by public. Thus, trading strategy based on historical prices cannot generate abnormal returns for investors.

Testing the weak-form of market efficiency means analyzing the pattern of stock returns and the independence of returns. Methods used to analyze the pattern are autocorrelation and runs test. Autocorrelation is used to analyze whether stock price are significantly correlated over time or not, while runs test is used to analyze whether stock price are independent over time.

2. Semi-strong form efficiency, where securities prices reflects all publicly available information. In this form, all publicly available information will quickly adjust stock prices so investors will not get abnormal return, also to prevent insider trading using new released information.

There are three types of information a company can gives to market, they are:

- a) Public information which will affect securities price of company who publish the information only. This information can derived from corporate event made by company (i.e. stock split, dividend announcement, merger and acquisition)
- b) Public information which will affect securities price of some companies. This information can derived from government regulation

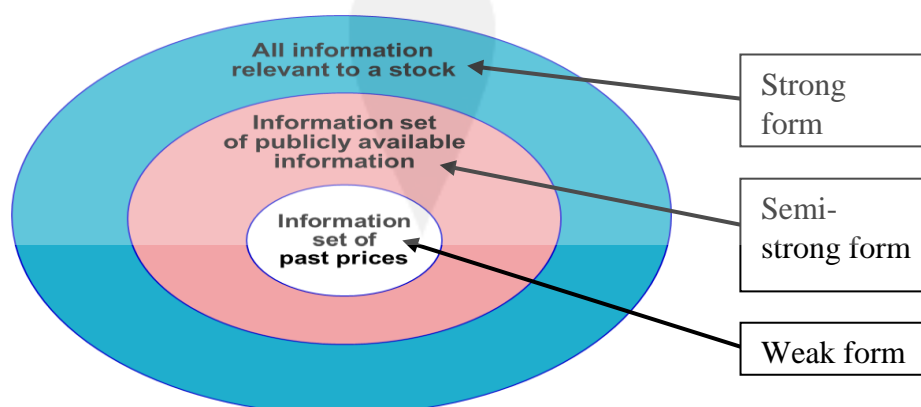
which affect only for some companies who relate to the regulation (i.e. financial regulation from government which affects only bank and other financial institution)

- c) Public information which will affect securities price of all companies listed in capital market. This information can derived from government and it is absolutely applied to all companies listed in a capital market (i.e. government regulation about tax)

The method to test semi-strong form of market efficiency is event studies. Event studies examines the prices and returns around the arrival of new information, both before event and after event. The aim of event studies in this case is to investigate whether stock prices have abnormal return, and analyze the response of stock prices toward new information.

3. Strong-form efficiency, where securities prices reflects all relevant information both public and private information. In this form of efficiency, there is no information which can give investors more profit because all information announced to the public or market.

Figure 3: Relationships among Three Different Information Sets



Source: Ross, S.A. et al., (2010). Corporate Finance pg. 435 with modification

It is stated above that Fama (1970) divides the forms of market efficiency based on type of information available in the market. Forms of market efficiency can be categorized based on information distribution (known as informationally efficient market) and decision made by market participants (known as decisionally efficient market) (Jogiyanto. 2003). Informationally efficient market considers only available information while decisionally efficient market considers the availability of information and sophistication of market participants.

Decisionally efficient market relates to semi-strong form of market efficiency because decisionally efficient market means investors need further analysis and interpretation when an event occurred. Sophisticated investors who can interpret information deeper and further can receive abnormal return compared to naïve investors who do not make further analysis of information released. For example, when there is increasing dividend announcement made by company, investors who are sophisticated will analyze the prospect and liquidity of company first before making decision while investors who are not sophisticated (naïve) will receive the information as soon as it released.

2.3.3 Implications of Market Efficiency

When financial markets are in semi-strong form efficiency, there are some implications for the company and investors such as:

1. Publicly available information is not helpful in forecasting future prices.
2. Without private information, the best way to forecast future prices is by using current price.

3. Without private information, firms cannot set optimal price to sell securities because all information is available in the market.
4. Firms should expect to receive fair value for securities that they sell. Fair means the price they receive from issuing securities is the present value. Thus firms cannot receive profits from fooling investors in efficient market.

Investors or firms who do not have private information about future events have two choices, whether they can admit that markets are efficient and quit trying to forecast security prices, or they can attempt to make the market inefficient from their perspective. One way to make the market inefficient include looking for inside information about future events, although it is illegal.

2.4 Active vs. Passive Portfolio Management

Active management is the attempt to improve investing performance either by identifying mispriced securities or by timing the performance of broad asset classes, i.e. increasing the commitment to invest in one stock when it is bullish on the capital market (Bodie, Zvi et al., 2011). In another side, passive management is the attempt to hold portfolios or improve investing performance without any efforts or other resources, so it is only through security analysis.

Since efficient market assumes that information reflects on securities prices, supporters of EMH believes that it is unnecessary for investors to have an active management strategy, since active management strategy wastes efforts and has

high cost. Passive management strategy focuses only at establishing a well-diversified portfolio of securities and it is characterized by buy-and-hold strategy (Bodie, Zvi et al., 2011). Since stocks prices are at fair levels and consists of all available information, it makes no sense to buy and sell securities frequently.

2.5 Information Asymmetry

Information is important in life, especially in decision-making process. Individuals, managers, even government need enough information before decide something. Information can be generated through both public and private information. Stiglitz (2002: 469) as cited in Connelly, B. L. et al., (2011) explains that information asymmetry happens when two parties have different proportion of information. Because some information are private and only few parties who know that information, party who holds private information have more advantages than another party who does not have private information.

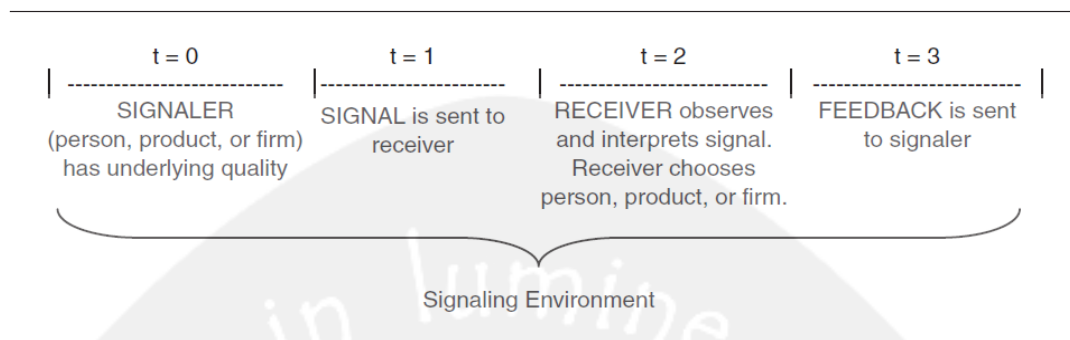
2.6 Signaling Theory

Spence (2002) states signaling theory is associated with reducing information asymmetry between two parties (Connelly, B. L. et al., 2011). Signaling affects information quality, since if companies send a signal to outsiders (investors), investors can obtain deeper information about the company and they can make a better investment decision. Connelly, B. L. et al., (2011) assumes quality as the underlying, unobservable ability of the signaler to fulfill the needs

or demands of an outsider observing the signal. Therefore, we can assume that firms need to send signal to investors when they will conduct an event to gain information whether outsiders interested with their following event, while investors need to get signal from firms in order to make better investment decision.

Investors see stock split announcement as signal of increasing dividend since companies who do stock split are companies who have good financial performance. Unfortunately, not all stock split event announcement can have the good response from market. Companies who are liquid will receive the positive response from market as feedback for their signals while companies who are not liquid may receive the negative response. Market and investors see companies who are not liquid or have less trading volume activity as not having good prospect in the future so they will not interested to invest in those companies. Furthermore, if companies who actually have bad prospect still doing stock split, sophisticated investors will give this announcement negative response.

In signaling theory, there are two important parties to make the signaling process flows well. Those parties are signaler and signal receiver – as well as the signal itself. The following figure describes the concept of signaling, starts from when signaler obtains information until the feedback that receiver send to signaler.

Figure 4: Signaling Timeline

Note: t = time.

Source: Connelly, B. L. et al., (2011) pg. 44

Signaler is the person inside a company (executive or manager) who has private information about the company. This information includes company's products and services, upcoming corporate events, etc. Since insider has many information about the company, both good and bad news, signaler then send signals to outsiders which has useful information to attract more investors.

Before sending signal to outsiders, signaler should analyze and decide which information to communicate to cut information asymmetry. Signaler needs to send good signal to outsiders to make outsiders assume the company has good reputation and it is a suitable place for investment. Unfortunately, company cannot always communicate good information to outsiders since the company may facing difficult situation, so bad news is also important to be communicated to public in order to cut information asymmetry.

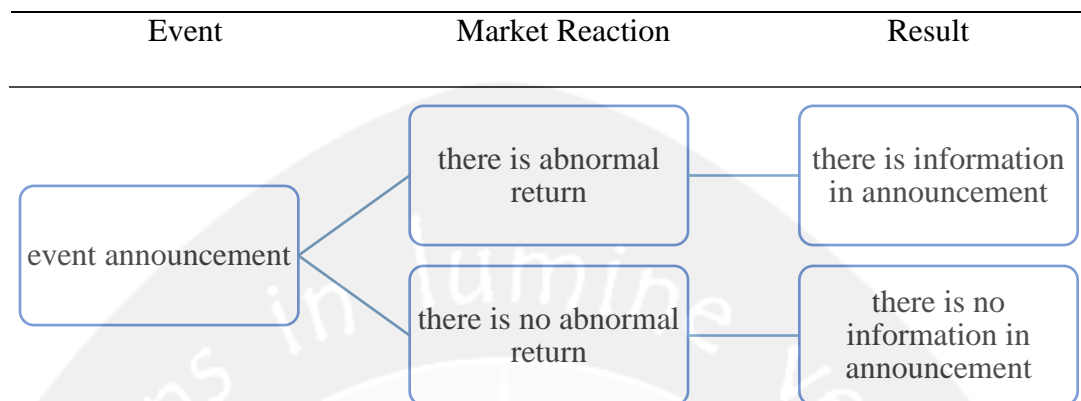
Signal receiver is outsiders who are lack of information about the company but they are willing to receive information from signaler. When receiver receive signal from signaler, they will try to analyze the information before making

decision. After they make a decision, outsiders will send response signal to insiders which also known as feedback.

2.7 Event Study

Event study is a technique of empirical financial research that enables an observer to assess the impact of a particular event on a firm's stock price (Bodie, Zvi et al., 2011). In other side, Jogiyanto (2003) said that event study learns market reaction to an event whose information announced to public as an announcement. General approach of this study is to analyze information content of an announcement and market reaction when there is a particular event. The aim of information content test is to see market reaction to an announcement. If an announcement has information content, then market is expected to have reaction when the announcement received by public. Market reaction shown by changes in securities price.

Market reaction is measured using abnormal return. When there is abnormal return after an announcement released to public, then it means that announcement has information content. In opposite, if there is no abnormal return after an announcement released to public, then it means that announcement has no information content.

Figure 5: Information or Content of an Announcement

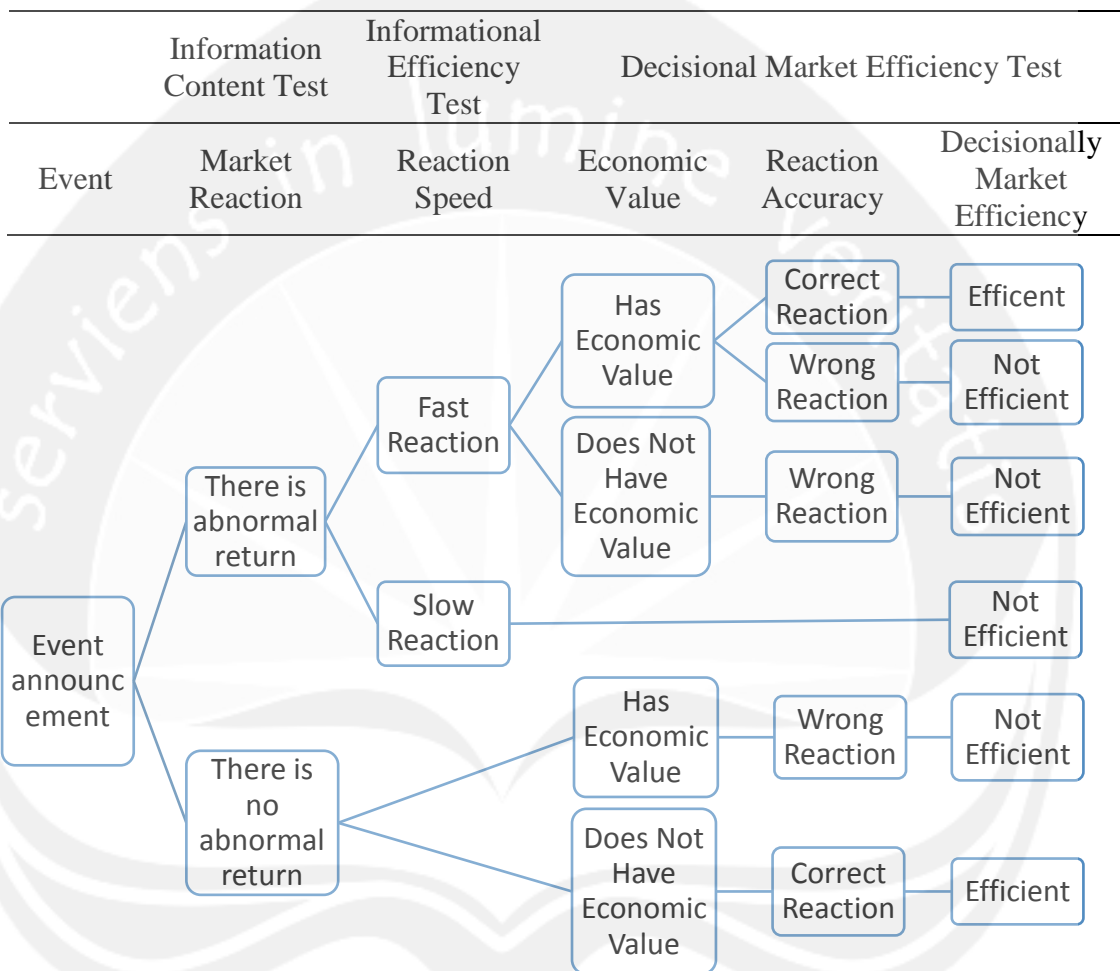
Source: Figure 14.2, Jogiyanto. (2003) pg. 411

However, the measurement can't be truly valid if there is leakage of information from inside of company (insider trading). Insider trading is the moment when an employee in a particular company releases an upcoming event information to a small group of investors before official public release. In case of good news announcement, the stock price will increase few days or weeks earlier before official announcement date, so if we want to measure abnormal return on announcement date, the data are not truly valid anymore.

A market is efficient if investors react quickly to absorb information to have equilibrium price. If investors absorb information slowly, then market is not efficient in semi-strong form based on information available. Market efficiency test can be measured from information available and decision made by market participants. Market efficiency test which based on information only does not give attention to the sophisticated of market participant, while market efficiency test based on decision can differentiate information which has economic value and has

no economic value. Furthermore, they will analyze further information received so they cannot be fooled by companies.

Figure 6: Market Efficiency Test Based on Information and Decision



Source: Figure 14.4, Jogiyanto. (2003), pp. 414

The figure above shows that there are four factors in decisionally market efficiency test, they are (1) abnormal return, (2) reaction speed, (3) economic value, and (4) reaction accuracy (Jogiyanto. 2003). It is different with informational market efficiency test, which only required abnormal return and reaction speed to test market efficiency.

Stock split is the act of dividing one big share (n) into some small shares ($1/n$) to increase liquidity and attract more investors. Actually, stock split does not increase the value of companies or in other words, stock split does not have economic value. Since stock split does not have economic value, for a market said as efficient, then market should not react to the announcement. In opposite, if market reacts to stock split announcement which do not have economic value, then market can be said as not efficient (Jogiyanto. 2003).

2.8 Empirical Studies

There are many previous empirical studies that analyze the applicability of semi-strong market efficiency to stock market in the context of corporate events. Many researches look for the impact of stock split event to capital market performance, and verify whether the market follows semi-strong market efficiency.

Fama et al. or FFJR (1969) examined the reaction of stock prices around the announcement date of stock splits. They use 940 stock splits event of firms listed in New York Stock Exchange in period of 1927 to 1959. To measure the effect of splits on returns, FFJR were using average residual and cumulative average residual. The research result shows that there are abnormal return in thirty months before stock split announcement while in the announcement month and after stock split announcement there are no abnormal return in the market. The conclusion of this study is that the stock market is efficient because market is not reacted to stock split announcement.

There are many researchers who conduct research using market model of event study as the main method of analysis. Chakraborty, Prithul (2011) investigated the pricing efficiency of Indian stock market in the context of stock split. He uses seventeen constituent stocks of S&P CNX Nifty as sample with the period from February 2000 to January 2010. The analysis based on average abnormal return shows that there is no statistically significant abnormal return around the stock split announcement day, but based on cumulative average abnormal returns, study reveals that almost all data are statistically significant. As the conclusion, this study failed to provide any consistent evidence which shows that Indian capital market supports the semi-strong form of pricing efficiency.

Chavali, Kavita and Zaiby Zahid (2011) analyzed the impact of stock splits on selected firms' stock price in India. This research analyzes 20 stock splits announcement event happened in BSE during April 2006 to September 2008 when global financial crisis were occurred, based on its sectors. They used Fama et al. (1969) market model event study as their method because it is powerful in detecting abnormal return compared to other methods. The results show that there are positive abnormal return activity around the event date thus it confirms that stock splits have a favorable impact on stock price performance. The study also reveals that information are absorbed quickly into share prices so it can be said that Indian stock market follows the semi-strong form of market efficiency and Indian market assumes that stock split announcement has information content.

Kumar S H, Sujith and Sadanand Halageri (2011) investigated market efficiency as the impact of stock split announcement on stock price, with sample

generated from Nifty constituent companies in India. To calculate the data, they use security returns variability and average security returns variability, t-test, and market model as the methods to measure abnormal return. The result of AAR shows that there are no significant abnormal return while the result of CAAR shows positive value which means investors react positively to stock split announcement. Since there are lags in stocks price, then Indian stock market does not support semi-strong form of market efficiency.

Patell, Mitesh et.al. (2016) examined the market return and trading volume reaction of Indian capital market in the context of stock split announcement from January 2016 to July 2016. The study uses market model and volume ratio as the method and result of study shows that Indian stock market is efficient during stock split announcement so investors cannot get abnormal return, but the event has negative impact on stock return. Besides that, study also shows that trading volume in Indian stock market does not affected by stock split announcement.

Yolsal, Handan (2011) had a research analyzing shares on Istanbul Stock Exchange (ISE) during 2005-2011 in the context of stock splits. In his study, Yolsal used t-test developed by Brown-Warner (1980), t-test by Patell (1976), and BMP t-test for the method of parametric test while for the nonparametric test, he used rank test developed by Corrado (1989) also rank test by Corrado and Zivney (1992) as the method. The result of parametric and nonparametric tests show that stock splits do not create abnormal returns so the market is said as semi-strong efficient.

Another corporate event which is commonly used in event study is dividend announcement. There are some researchers who conduct event study research in the context of dividend announcement to prove semi-strong market efficiency. Priyadharshini, Uma and S. A. Lourthuraj (2015) analyzed the semi-strong form efficiency in selected FMCG companies listed in NSE during 2013-2014. The aim of their study is to examine the impact of dividend announcement on stock market. There are eight FMCG companies selected as the sample, and their study apply various tools of analysis such as Beta, excess return, average excess return and T-statistics. Result of study shows that there are some companies which influenced positively by dividend announcement, but some other companies were influenced negatively. However, NSE still follows the semi-strong form efficiency.

Dangol, Jeetendra (2016) examined semi-strong form efficiency in Nepalese stock market with 10 years period, from 2000 to 2010, also in the context of cash and stock dividend announcement. Market model of event study is used as the method of this study. Dangol used 139 dividend announcement and the samples are divided into several groups of information, which are dividend-initiation, dividend-increase, dividend-decrease, and no dividend-change. Result of his study reveals that dividend announcements have signaling effect in Nepalese stock market, and Nepalese stock market also support the semi-strong form of market efficiency.

2.9 Summary of Literature Review

There are many earlier researches which investigate the semi-strong form of market efficiency and the impact of corporate events toward capital markets. The following table is to make it easier to understand about earlier researches.

Table 1: Summary of Previous Researches

No	Author	Variable	Period of Analysis	Methodology Used	Research Result
1	Fama et al., (1969)	New York Stock Exchange	1927-1959	Average Residual and Cumulative Average Residual	Market is efficient because market does not react to stock split announcement.
2	Chakraborty, Prithul (2011)	Indian Stock Exchange (S&P CNX Nifty)	February 2000 - January 2010	Average Abnormal Return (AAR) and Cumulative Average Abnormal Return (CAAR)	The study fails to provide evidence that Indian stock market follows semi-strong form of pricing efficiency due to inconsistent research result.
3	Chavali, Kavita and Zaiby Zahid (2011)	Indian Stock Exchange	April 2006- September 2008	Fama Market Model Event Study Methods	There are positive AR during observation period and information are absorbed quickly so Indian stock exchange follows semi-strong form of market efficiency.

No	Author	Variable	Period of Analysis	Methodology Used	Research Result
4	Kumar S H, Sujith and Sadanand Halageri (2011)	Nifty Constituent Companies in Indian Stock Exchange	1994-2009	Average Security Returns Variability (ASRV or SRV), AAR and CAR	Indian stock market does not support semi-strong market efficiency due to some lags in stock prices.
5	Patell, Mitesh et al., (2016)	Indian Stock Exchange	January 2016-July 2016	AAR, CAAR, t-test, and volume ratio	Indian stock market is efficient and trading volume is not affected by stock split announcement.
6	Yolsal, Handan (2011)	Istanbul Stock Exchange	2005-2011	Parametric test (Brown-Warner t-test, Patell's t-test, BMP t-test) and Nonparametric test (Corrado's rank test, Corrado and Zivney's rank test)	Stock split event does not create abnormal return in the market, so it can be said the market is semi-strong efficient.
7	Priyadharshini, Uma and S. A. Lourthuraj (2015)	FMCG companies in Indian Stock Exchange (NSE)	2013-2014	Beta, excess return, average excess return, and t-statistics	NSE still supports semi-strong market efficiency although several companies are affected positively and the others are negatively.
8	Dangol, Jeetendra (2016)	Nepalese Stock Market	2000-2010	AAR, CAR, and t-statistics	Dividend announcement has signaling effect on Nepalese stock market, and the market is semi-strong efficient.

2.10 Hypotheses Development

Stock split is an event which gives advantages for both investors and companies, since stock split can increase company's liquidity, attract new investors to invest in the company, also increase stock proportion owned by recent investors. However, some investors will try to get more return from market (also known as abnormal return) after new information about upcoming stock split event released to get extra profits. Because of that, researcher develops first hypothesis as follows:

1. There is abnormal return on Indonesian stocks during stock split announcement event.

The theory above explains that there are three forms of market efficiency and efficient market has different reaction compared to inefficient market when new information released. Commonly, the target of new information is public and that new information can affect securities prices in capital market immediately, which is known as semi-strong form of market efficiency. Based on the theory, researcher develops second hypothesis as follows:

2. Indonesia Stock Exchange follows semi-strong form of market efficiency.