EFFECT OF DIVIDEND ANNOUNCEMENT ON STOCK RETURNIN NEPALESE STOCK MARKET

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RECOMMENDATION

CERTIFICATION

DECLARATION OF AUTHENTICITY

I, Puja Timsina, hereby declare that the Graduate Research Project entitled "Effect of Dividend Announcement on Stock Return in Nepalese Stock Market" prepared under the guidance of Dr. Jeetendra Dangol for the partial fulfillment of Master of Business Administration from School of Management, Tribhuvan Univesity (SOMTU) and submitted at Faculty of Management, Tribhuvan University is my original work and have not been presented elsewhere before.

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ABBREVIATIONS

AAR: Average Abnormal Return

CAR: Cumulative Adjusted Return

DW: Darwin-Watson

EMH: Efficient Market Hypothesis

GRP: Graduate Research Project

IT: Information Technology

P/E ratio: Price-to-Earnings Ratio

MB ratio: Market –to-Book Ratio

NEPSE: Nepal Stock Exchange

EXECUTIVE SUMMARY

Dividend announcement is one of the most important information about the company to the shareholders. According to the semi-strong form of EMH, the information made public must be adjusted to the price of the company within the event date for the market to be efficient. According to the signaling theory, announcement of increase in dividend is good news; announcement of decrease in dividend is bad news and announcement of constant dividend is no-news for the market to adjust. This article has tried to test the semi-strong form of EMH in context of Nepalese listed companies and also test the effect of firm-specific and market-specific variables on market reaction to dividend announcement as suggested by anomalies in the market. From the analysis of 98 announcements from 30 companies over 10 years (2010/11-2019/20) using the event study methodology, it was found that the Nepalese Stock Market is semi-strong form efficient in case of dividend increase and decrease where prices are absorbed and adjusted within the event day whereas market doesn't seem to be semi-strong form efficient in case of no change in dividend though AAR seem to be random over event period. It implies that stock return increases (decreases) due to announcement of dividend increase (decrease) confirming to dividend signaling theory, information content hypothesis and semi-strong form of EMH. Furthermore, regression analysis has been used to observe the impact of firm-specific variables (firm size, dividend yield and market-to-book ratio) and market specific variables (ruling political party and market condition). From the analysis, it was found that none of the firm-specific and market variable had any significant impact on market reaction to dividend announcement further stating the semi-strong form efficiency in Nepalese stock market.

CHAPTER I

INTRODUCTION

1.1. Background of the Study

There are many theories which state the risks, return and predictability of stock market and many theories have been tested. From among these theories, Efficient Market Hypothesis (EMH), a theory developed to examine the efficiency of the market, states that the market is unbeatable, and investors cannot gain abnormal return from the market as every stock price at every time efficiently includes every information in it. The Efficient Market Hypothesis (EMH) developed by Eugene Fama in 1970, categorizes the efficiency of stock markets into three levels on the basis of information available, its absorption and adjustment in the market.

According to Shleifer (2000), the theory of market efficiency is based on the three assumptions. First, all investors are rational and valued security price rationally. Second, if some investors are not rational, their trades are random and cancel each other without affecting prices. Third, if investors are irrational, the arbitrageurs eliminate their influence on securities prices. So, the market participants are unable to generate abnormal returns.

Weak form of efficiency is when the stock prices fully reflect all historical prices and trading volumes (Fama, 1970). Therefore, the technical (trend) analysis which is a technique using the derivation of past price movements in order to find out a meaningful sign to predict the future path of an individual stock or stock market itself is useless (Brealey et al., 2007). Semi-strong form of efficiency states that, in addition to the past prices, all publicly available information including fundamental data should be fully reflected in security prices. Thus, one cannot make a superior profit by using the fundamental analysis in the market which is efficient in the semi-strong form. Strong form of efficiency states stock prices instantly reflect not only all such information as is made available to the general public, but also information available to insiders in firms (Campanella et al., 2016) . In such a market, prices would always be fair and any investor, even insider traders, cannot beat the market.

This research is focused on testing the semi-strong form of efficiency in Nepalese Stock Market. It is obvious that technical analysis cannot work at the semi-strong

form of efficient market because, if a market is efficient in the semi-strong form, it is also efficient in the weak form, because past prices are also publicly available information (Campanella et al., 2016). As stated by the literature, one cannot beat the market with any kind of publicly available information. One of the major information made publicly available about the company is its dividend announcement which has been focused as a subject of study in this research. The announcement date, absorption period and adjustment period sets the rate of inclusion of information on the share price. However, insider trading (private information) can be used to make abnormal returns in semi-strong form of market efficiency.

This research also tests the dividend signaling theory initially proposed by Bhattacharya (1979) which stated that the dividend announcement proposes the potential future prospects of the firm which influences the share price around announcement period. Further, this study tries to test the information content hypothesis proposed by Miller and Modigliani, (1961) which stated that the dividend announcement acts as surrogate for future earnings and hence is an important public announcement for shareholders.

Fama (1991) argueds that each individual test on semi-strong form efficiency only brings supporting evidence for the model, with the idea that by accumulating such evidence, the validity of the model will be established. So this research will use the confirmatory research design to test the hypothesis in order to analyze the semi-strong form of efficiency in Nepalese Stock Market through the effect of dividend announcement on stock prices. Semi-strong form efficiency is generally tested under two approaches: the direct method supported by event studies and indirect method that conducted by performance evaluation studies.

Where EMH states that the market is unbeatable, there are behavioral theories which state the existence of behavioral biases and market anomalies that cannot be explained through EMH. Among 3 types of market anomalies i.e. Fundamental Anomalies, Calendar Anomalies and Technical Anomalies, this article focuses mostly on fundamental anomalies and their existence on Nepalese Stock Market. De Bondt & Thaler (1987), Fama & French (1992), Lakonishok et al. (1994) and many other researchers presented strong views on fundamental anomalies stating effect of small

and large capitalization stock, price-to-book effect, dividend yield effect and price-to-earning effect.

Based on the theories of anomalies, this study tries to test the semi-strong form of EMH while analyzing the effect of firm size, dividend yield and market-to-book ratio on market reaction to dividend announcement. Many researchers (Vieira, 2011, Dangol & Acharya, 2020, Doe, 2015, HN, 2018 and Fotios & Panayotis, 2007) provided some insights on the relation between different market variables and firm-specific variables and return on stock in the market. So this research tries to analyze the effect of market and firm-specific variables on the market reaction to dividend announcement of the companies.

1.2. Statement of Problem

Dividend announcement comes with many theories that contradicts with one other like, Bird-in-the-hand theory, Dividend clientele theory, Free cash flow theory, Dividend Signaling theory, Efficient Market Hypothesis and so on which makes it complex to analyze and interpret the meaning. Some of the problem statements are observed through literature review and are presented in this study.

The ambiguity and contradiction in results regarding the effect of dividend announcement on share prices come from different reasons which can include macro (Country-specific) and micro (Firm-specific) level changes in the literatures. When many research show that there is no significant evidence of semi-strong form of efficiency but accept the dividend signaling theory in context of dividend announcement (Dangol, 2016 and Anh, Phuong & Manh, 2016) while many researches have proven the existence of semi-strong form of efficiency (Dangol, 2018, Hussin et al. 2010, Aharony & Swary, 1980, Asquith & Mullins, 1986, Dhillon & Johnson, 1994, Amihud & Murgia, 1997). This provides the space for further research and discussion on the topic in Nepalese context as the test results have varying results in varying countries and time.

The research framework undertook by most researchers (Dangol, 2018, Hussin et al. 2010, Aharony &Swary, 1980, Asquith & Mullins, 1986, Dhillon & Johnson, 1994, Amihud & Murgia, 1997) only included the relationship between dividend announcement and share price whereas recently the effect of moderating variables has

been taken into consideration by few researchers (Vieira & Raposo, 2011, Kosedag & Qian, 2009 and Dangol, 2016) taking few firm specific variables (Firm size, Market Capitalization, Time, Market Condition, Dividend Yield, Market-to-Book Ratio) as moderators. Adding the effect of political parties in rule as the dummy variable on the market reaction to dividend announcement, the research can give perspective on changes in market reactions on different political philosophy.

There are limited articles where all or most of the firm specific variables are tested at the same time in Nepalese context. Dangol, (2016) is an example with Firm size, Market Capitalization, Time, Market Condition, Dividend Yield, and Market-to-Book Ratio as the moderating variables to show the effect of dividend announcement on share price with 10 years of study period. The research on the related and additional topics are yet to be done which implies the space for research in Nepalese share market even with many articles on semi-strong form of EMH.

The research tries to answer the question raised forward for the study:

- Does the dividend announcement carry enough information to affect the share price?
- Do dividend increase (decrease) results in increase(decrease) ofthe share price?
- Does constant dividend have no effect on share price?
- Do firm specific and market variables have any impact on market reaction to dividend announcement?

1.3. Objectives of the Study

The main objective of the study is to test the semi-strong form of efficiency on Nepalese stock market in case of dividend announcements. This research tries to analyze whether Nepalese Stock Market is efficient enough that investors would be unable to beat it with all publicly available information in case of dividend announcement. The specific objectives are:

- To examine the effect of dividend announcement on share price.
- To assess the absorption and adjustment time of market reaction to the announcement of increase, decrease and no-change in percentage dividend per share.

- To analyze the impact of firm specific and market variables on market reaction to dividend announcement.

1.4. Research Hypothesis

To achieve the set-out objectives, the following hypotheses have been formulated and tested. The mentioned hypotheses are alternative hypotheses and have been set as per predetermined direction of impact of independent variables on dependent variables. These hypotheses are derived from Dangol, (2016) and similar hypotheses found in different other literatures like Dangol and Acharya, (2020), HN, (2018), Vieirra, (2012) and so on.

H1: The dividend announcement has significant effect on changes in share price in same directions during the announcement period.

> H1a: Dividend increase announcement leads to significant increase in share price during announcement period.

> H1b: Dividend decrease announcement leads to significant decrease in share price during announcement period.

> H1c: Constant dividend announcement has significant change in share price during announcement period.

H2: The firm and market specific variables affect the market reaction to dividend announcement during the event window.

> H2a: Firm size has significant impact on market reaction during the dividend announcement window.

> H2b: Dividend Yield of the company has significant impact on market reaction during the dividend announcement window.

> H2c: Market-to-Book Ratio of the company has significant impact on market reaction during the dividend announcement window.

> H2d: Difference in ruling political party has significant difference on market reaction during the dividend announcement window.

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H2e: Difference in market condition has significant difference on market reaction during the dividend announcement window.

1.5. Significance of the Study

The study not just adds valuable research on the field of Efficient Market Hypothesis, Dividend Signaling Theory but provides additional base for research on many topics. While many research have been conducted to test the Efficient Market Hypothesis, it tries to tests few other variables which could have impact on stock return.

This study provides the general reaction of the market to dividend announcement of the firm which let investors to anticipate the movement according to the nature of announcement. This study helps investors analyze the general profit levels from either trading the share in current market price around the announcement date or to gain the dividend yield as per market reaction.

This study relates the dividend announcement and its nature to the perception of investors towards the company due to which changes in share price can be seen around announcement date as per dividend signaling theory. Company can maintain the goodwill through dividend payment and maximize shareholders' wealth through internal capital. It can be further associated with firm-specific and environmental variables to gain better insights on the dividend announcement effect on share price.

1.6. Scope and Limitations of the Study

This study analyzes the dividend announcement as an event and percent change in dividend as the divided change. The area of study includes:

- Only the companies listed in Nepal Stock Exchange are taken into consideration.
- Although the sample has been proven sufficient from literature review, a larger sample from some years earlier would make the analysis more representative.
- Commercial banks and financial institution covers larger proportion of the sample.

Research conducted in any field has its limitations and criticisms which later improvise the study, motivates for further research and allows scope of additional knowledge on the topic. Some of the limitations of this study are:

- Semi-strong form could be tested more accurately with analysis of additional news and public information like earning announcement, right share announcement and political events along with dividend announcement.
- This study relies mostly on secondary data and lacks expert's opinions and views about the market reaction to dividend announcement and its possible causes.
- Small market size, limited number of companies, unavailability of information and contamination of information lead to limited number of dividend announcement events for the research.

1.7. Structure of the Body

The paper consists of a comprehensive review of the relevant dividend policy theory and a brief inquiry of the efficient market hypothesis. Furthermore, the data sample is followed by a review of the event study and other methods used in this study. In addition, the results are combined with an analysis and discussion about the outcome. This is followed by a conclusion and a brief review of the delimitations of this paper. The research has been divided into 3 sections which are further explained in 5 chapters of the report. The major 3 sections of the report are:

i)   Preliminary Section
ii)   Body of Research
iii) Supplementary Section

The preliminary section contains the certification, acknowledgement, abstract of the study, table of content, list of tables, list of figures and abbreviations used in the report. This section gives a brief view on the content of the report and knowledge on the surface.

The body of the research is divided into 5 chapters. Chapter one introduces the entire project by discussing dividend policy and the on-going debate about the information content of dividend. The chapter also discusses the relevance of the study, the

objectives and the scope of the study. It provides the strength and limitations of the research and scope of the research. Chapter two presents a review of studies done by previous researchers on dividend announcement. This chapter begins with a brief overview of some of the major theories on dividend, followed by empirical studies done by researchers on other capital markets and then narrowed down to studies done on the Nepal Stock Exchange. The data, sample, sampling techniques, model of research, method of calculation and definition of terms used in analysis is presented in chapter three. Chapter four presents the analysis and discussions of the findings obtained from the tests conducted in the previous chapter. It provides the tabular and figurative description of calculation which gives clear picture of result to be presented from the research. Chapter five offers a summary and a discussion of findings, implications for practice and concluding remarks of the study.

The supplementary section provides the detail on the works that are reviewed before and while conducting the research and preparing the report. It also provides additional data and calculations of the data analysis that have been presented earlier in the report. This part validates the work that has been carried out in the process of conducting the research through the references and appendices.

CHAPTER II
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Literature review provides the insights on the theories on which the study is based on, past studies and their results along with the results presents in the studies prepared and published earlier.

2.1. Theoretical Review

Theoretical review provides the base on which the study is conducted. It provides the theoretical knowledge of the subject matter and what the study is supposed to be along with the idea of expected results which can he further compared with the real scenario.

2.1.1. Efficient Market Hypothesis

The theories on efficient market started when Eugene Fama mentioned about the reflection of all available information on the stock price in 1970. The article tested whether the share price of any company states all available information in the market which would reflect the true intrinsic value of the stock. The article stated various models in order to test the efficient market hypothesis which included "Expected Return Model" which stated that the equilibrium expected return is the function of its risk and definition of risk differs as per different theories. The other model presented was "The Sub martingale Model" which stated that the price sequence follows a sub martingale if nothing more than the next period's price is equal to or greater than current price. Likewise, it follows martingale if the expected return and price changes both are zero.

Efficient Market Hypothesis mostly states the "Random Walk Model" which stated that the market is efficient only if it "fully reflects" all the information and the successive one-period returns are independent from one another.It states that the return from the stocks is completely independent and cannot be predicted correctly consecutively. Fama, (1991) further elaborated the process stating the return predictability of the stock and 3 different forms of efficiency in the market.

a. Weak Form Efficiency

Weak form efficiency tests how well do past prices predict future returns (Fama, 1991). Weak form efficiency states that the market is efficient if all the past prices are "fully reflected" on the stock price. This indicates that the weak form efficient share price includes all past information or historical information that could affect the share price. Fama, 1991 stated that the weak form efficiency is the test of return predictability of any stock. This implies that in efficient market, stock return can't be predicted from the historical share prices and that there is no known pattern in which stock prices moves in the market.

b. Semi-strong From Efficiency

Semi-strong form of efficiency is the one that includes not just the past information but also all public information (Fama, 1970). So, semi-strong form efficiency includes the weak form efficiency of the market along with the inclusion of publicly available information in the stock price. Fama, 1991 stated that semi-strong form of efficiency tests how quickly security prices reflect public information announcements. In semi-strong form of efficiency, the inclusion, reflection and adjustment of prices as per the news or announcement made is tested to examine whether or not the market is efficient. The common title "event studies" was given in order to know the impact of event on share price along with the amount of time required to adjust the price. Event studies gives the most direct evidence on efficiency and the evidence is mostly supportive (Fama, 1991).

c. Strong Form Efficiency

Strong form tests whether any investor has any private information that is not fully reflected in market prices (Fama, 1970). This form states the changes in prices of the stock prior to any public announcements due to leakage of information through any inside sources leads to inefficiency of the market. It states that a market is strong form efficient if the stock price includes not historical prices and public information but also the private information available to any of the stockholder. Fama, 1991 has given a title "a test for private information" to test the strong form efficiency. The corporate insiders have private information that may not be fully reflected in the price. The evidence in whether the professional investment managers (mutual fund and pension

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fund) have private information is, however, murky, clouded by joint hypothesis problem (Fama, 1991).

2.1.2 Latest Development on EMH

The Efficient Market Hypothesis (EMH) evolved from the random walk theory and the fair game model. Fama (1965, 1970) later developed the EMH classifying efficient capital markets into three types: weak form, semi-strong form, and strong form efficiency. Eugene Fama is thereof directly responsible in building up the theory and developing it which has been in use since it evolved. Before Fama introduced the theory, many researchers like Bareinstein et al (1988), Alexander et al (1934), Cowles and Jones (1937) have introduced and tested random walk on the stock price but was overlooked until 1950s (Nwaolisa & Kasie, 2012). The efficiency of market on weak form was tested in early 1900s and the evolution stated through a mathematician testing the theory of speculation.

A French mathematician, Louis Bachelier, deduced that "The mathematical expectation of speculator is zero" in his thesis in 1900 while Karl Pearson introduced the term "random walk" five years later in 1905 (Sewell, 2011).The theory started to work as a base to check the ability to speculate the price in any market on many articles and studies in 1950s and 1960s. There emerged many critics of the random walk principle and Fama, (1965) first coined the word "efficient" for a market and on the same year, Samuelson, (1965) stated that the properly fluctuated prices are distributed randomly and tested the theory of "efficient market". Yet the paper by Fama, (1970) is considered to be the milestone in the development of Efficient Market Hypothesis and in this paper, he defines the efficient market and provides base for determining whether a market is efficient.

In 1970, Fama described the three types of market efficiency which was tested, approved as well as criticized while in 1991, Fama re-described the three forms of efficiency as i) weak form as the test of return predictability ii) semi-strong form as reflection of public information and iii) strong form as reflection of public as well as private information of the firm. In this article, Fama stated that more tests on EMH will further prove the theory to be true as there emerged a large number of critics of the theory. There were enough literatures to test and criticize the theory contributed by different researchers from 1950s to 2000s.

EMH was highly criticized by behavioral theory and researchers to work on it when the stock market crash of 1987 was a serious challenge to those who believed that the hypothesis was an accurate description of the way security markets work. Shleifer (2000) questions the assumptions of investor rationality and perfect arbitrage while Lo (2000) published a selective survey of finance, and Beechey et al. (2000) published a survey paper on the EMH. Shiller (2000) published the first edition of Irrational Exuberance, which challenges the EMH, demonstrating that markets cannot be explained historically by the movement of company earnings or dividends. In a paper on the global financial crisis Ball (2009) argued that the collapse of Lehman Brothers and other large financial institutions, far from resulting from excessive faith in efficient markets, reflects a failure to heed the lessons of efficient markets whereas Lee et al. (2010) investigated the stationarity of real stock prices for 32 developed and 26 developing countries covering the period January 1999 to May 2007 and conclude that stock markets are not efficient. Similarly, many anomalies like calendar anomalies, days-of-the-week effect were unable to explain through EMH were the base for behavioral factors on determining the efficiency of the market.

EMH has evolved for more than a century and is still used in financial studies and analysis of efficiency of the markets around the globe. Since the market and its nature changes as per location, technologies, accessibility of information and literacy of the investors, there are found enough trails of differences between countries and markets. Though many studies have been done in order to prove the theory to be accurate in defining the efficiency of the market, enough research are emerging to challenge the theory which makes the theory to be still debatable and provides the scope for further studies.

2.1.3 Dividend Announcement

Dividend is the share of profit dividend to the shareholders as the return to the capital invested by them in the firm hence it is one of the most important information for the shareholders. Miller and Modigliani (1961) suggested that dividends may provide a vehicle for communicating management's superior information concerning their assessment of the firm's prospect. Whereas Pettit (1972) stated that announcements of dividend increases are followed by a significant price increase and announcements of dividend decreases are followed by a significant price drop. Since the information can

be easily dividend to increase and decrease in dividend and is easier for analyzing the effect, the research focuses on evaluating the effect of dividend changes on stock return within the event window of announcement.

On determining the major events of the company, earning announcements and dividend announcement are said to be the two most effective and widely studied topics for research. Among them, dividend announcement has been considered to have higher effect than earning announcement due to certainty of amount to be received on hand and Aharony and Swary (1980) found that these relationships hold even after controlling for contemporaneous earnings announcements. While many research,Mrzyglod and Nowak (2017),Dangol (2018), HN, (2018), proved to have strong relationship between dividend announcement and stock return, many researches, Suwanna (2012), Dangol (2016), Kadioglu et al., (2015), proved non-existence of semi-storng form of efficiency in case of dividend announcements. This further created a space to prove the existence semi-strong form efficiency in case of dividend announcemnt as it has been the topic for debate for years.

2.1.4 Dividend Signaling Theory

Signaling theory was developed and evolved through 1970s and 1980s where Bhattacharya (1979), John and Williams (1985) and Miller and Rock (1985) developed the signaling models based on the information asymmetry hypothesis. These theories implied that few people have access to some important information which has yet to be public which creates asymmetry in the information. This implies that the signaling theory reject the strong form of market efficiency stating that there is insider information, which is available to few people, unadjusted to the market price of the share and unknown to general public.

Dividend Signaling Theory refers that the insider of the company or few people have enough accessible information unknown to general public which let them have benefits on trading the shares on the basis of amount, time and percentage of dividend payment. This theory state that the managers of the firm have real information on dividend distribution earlier than general public do and the general public usually have imperfect information which leads to insider trading and the concept of EMH fails to prevail true in such conditions

2.1.5. Information Content Theory

Dividends may serve as a surrogate for future earnings, if earnings consist of permanent and transitory components, and if dividends depend on permanent earnings (Miller & Modigliani, 1961) which was agreed upon by Bhattacharya, (1979). Hence, Announcement of Dividend distributes important information about the future prospect of the firm to its shareholders which changes the perception of firm's value resulting to change the market price of the share.

Furthermore, Huffman and Yosef, (1986) stated that there exists a trend that points out that higher the level of expected cash flow, lower the effect of marginal cash flow on dividend. However, the size of declared dividend is an increasing function of expected cash flow.

2.1.6. Dividend Clientele

Dividend clientele refers to having a common perception and preferences regarding the company's dividend payout ratio which helps in minimizing the tax burden of the shareholders. Bajaj and Vijh (1990) suggested that the existence of dividend clienteles may partially explain price reactions to dividend change announcements. The study argued that if marginal investors in different stocks value dividends differently, anticipated dividend yield should be associated with the price reactions to dividend change announcements. However, Kosedag and Qian conducted a research resulting against the dividend clientele hypothesis and states that the dividend announcement is considered to be "good news" or a "bad news" based on the expectation of the shareholders and not based on the change in dividend percentage from previous year. However, our study has assumed that the investors expect the dividend announcement to be consistent with last year's dividend which means increase in dividend is "good news" and decrease in dividend is "bad news" for our study.

2.1.7. Free Cash Flow Theory

This theory is firmly based on agency theory which states that mangers are agents to shareholders who act as principle of the firm. Managers want to have excess cash on the firm while shareholders want the return. While tax implication is supposed to decrease the shareholders' value during dividend payment, shareholders prefer holding cash in hand in order to reduce opportunity cost supported by bird-in-the-

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hand theory. Dividend payment alleviates the problems for the managers further reducing the free cash flow available to them.The free cash-flow hypothesis (also known as the excess-cash hypothesis) states that dividend policies address agency problems between managers and outside investors (Easterbrook, 1984; Jensen, 1986; Fluck, 1995).

2.1.8. Event Study

Event study is a tool to analyze the impact of an unanticipated event on the stock price of a firm which has been explained by McWiliam and Siegel,(1997). This study states that the standard approach is based on estimating a market model for each firm and then calculating abnormal returns. These abnormal returns are assumed to reflect the stock market's reaction to the arrival of new information. For this, an event should be non-contaminated by any other confounding events, should have efficient market and information should be publicly available.

Event study is used in order to test the semi-strong form of EMH which includes testing the absorption and adjustment of prices as per the direction of information received. Event study can be used for testing the effect of any unanticipated event like earning announcement, Corporate Social Responsibility, dividend announcement, mergers and acquisitions. In the event study, the information or the released event is classified as "good news" and "bad news" which specifies the direction of change in stock prices of the firm.

Earlier literatures on event studies include an investigation of the impact of annual earnings announcement on stock prices. MacKinley (1997) outlined an event study methodology involving the following steps:

i)   Identification of the event of interest
ii)   Definition of the event window
iii) Selection of sample set of firms to be included in the analysis
iv)   Prediction of normal return during the event window in the absence of the event
v)   Estimation of the abnormal event within the event window, where the abnormal return is defined as the difference between actual and predicted returns, without the event occurring

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vi)   Testing whether the abnormal return is statistically different from zero.

Many researchers have been using the event study methods in order to test semi-strong form Aharony and Swary (1980), Dhillon and Johnsom, (1994), Vieira, (2011),Dangol, (2016), Stasiulis, (2009),Dangol, (2018),Kosedag and Qian, (2009) and many other researchers have found to have applies event study in order to test semi-strong for of EMH.

2.1.9. Market Anomalies

There exist many theories against the Efficient Market Hypothesis (EMH) based on behavioral aspect of investor and anomalies in the market. De Bondt and Thaler (1987), Fama and French (1995), Lakonishok et al. (1994) and many other researchers have stated 3 different kinds of market anomalies. Fundamental anomalies states that there is difference in investors' reaction to the information according to the nature of the firm, calendar anomalies states that stock return differ according to the time of the year, month and days in the week which cannot be explained by EMH and finally technical anomalies which states that the stock movement and return can be anticipated with the use of charts and graphs which makes the market weak-form inefficient. This study focuses more on the fundamental anomalies and test whether the firm-specific variables have specific impact on market reaction to dividend announcement.

Fundamental anomalies include small cap effect, which states that small capitalization company provides higher return that large capitalization stock (Banz, 1981), dividend yield effect, which explains that firm with higher dividend yield provides higher return (Yao et. al., 2006), P/E ratio effect, which explains that stock with low P/E ratio outperforms the stock with high P/E ratio (De Bondt & Thaler, 1985) and loser stock overreact to market than winner stock because overreaction effect is much large for loser than winner stock (De Bondt & Thaler, 1985). Hence, some of the anomalies unexplained by EMH are tested to observe if fundamental factors of the firm have any impact on market reaction in Nepalese stock market.

2.2. Empirical reviews
This study is focused on testing the semi-strong form of EMH proposed by Fama, (1970) which stated that investors cannot beat the market with all the publicly

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available information and hence any technical and fundamental analysis is not useful to beat the market. For this, event study method has been used and the event selected for the study is dividend announcement by the firms listed in NEPSE.

Many empirical studies have been conducted in order to test the market efficiency in semi-strong form. Some of the studies have been reviewed in order to gain the knowledge on the subject while observing the findings.

2.2.1. Dividend Announcement and Stock Return

A large number of tests have been done at different time on different countries under varying circumstances regarding the public announcements and their result on share prices. These empirical tests have shown that dividend announcement has an effect on price of the company (Aharony & Swary, 1980, Asquith & Mullins, 1986, Dhillon & Johnson, 1994, Amihud & Murgia, 1997). All of these tests show significant information content on dividend announcement. Though there are enough evidenceof mixed result, the association of dividend announcement on share price can be seen on the literature.

In case of test of dividend signaling theory proposed by Bhattacharya (1979), Chen et at. (2010) conducted an empirical study in China's stock markets which presents that the result can partly support the dividend signaling theory whereas, Suwanna (2012) conducted a study on 60 Thai companies from year 2005 to 2010 conforming the dividend signaling effect and revealing that dividend announcement have statistically significant impact on share prices of Thai companies.

Dangol (2016) employed the market model in order to test semi-strong form of efficiency in Nepalese market from 2000-2011 testing the impact of earning and dividend announcement on share price. The study observed 92 dividend announcements and concluded that the dividend signaling hypothesis is accepted but the semi-strong form of market efficiency is rejected.

Further test of semi-strong form of efficiency includes Hussin et al., (2010), where a study on effect of dividend announcement on share price in Malaysia was conducted. For this, 120 listed companies listed on Bursa Malaysia were chosen. The study employed the naïve dividends and earnings expectation model and confirms the semi-strong form of efficiency. Similarly, Kadioglu et al., (2015) conducted a research in

Borsa, Istanbul with 902 announcements made by 118 companies which states that dividend announcement decreases the share price supporting tax clientele and suggests that there is no statistically significant information leakage prior to the announcement date, and it seems that the inefficiency of the market decreases over time as prices adapt to new information more quickly.

Abdullah, Rashid and Ibrahim, (2002) adopted event study method to examine the price reaction of 120 companies surrounding 60 days of announcement window. The study found that the stock had positive impact on both dividend decrease as well as dividend increase and no significant chnages during dividend no-change which states that the market is efficient in case of dividend increase and dividend no-change but is not efficient in case of dividend decrease.

Anh et al., (2016) covered all listed companies as sample to test the effect of earnings and dividend announcements on stock price on Ho Chi Minh Stock Exchange of Vietnam from 2014 to 2015. It concludes that both announcements have significant effects on the stock price with relative significantly abnormal return surrounding announcement date. However, changes in cash dividends do convey more useful information to the market than stock dividend.

Dangol (2016) conducted a research with 139 observations in Nepalese listed companies and found that dividend initiation and dividend increase have highest positive return and dividend decrease has highest negative return on the announcement date whereas no-change dividend has insignificant abnormal return through the event window.Likewise, Doe (2015) found that dividends carry negative information to the market and company size influences the effect and the speed with which the market reacts to dividend announcements on the Ghana Stock Exchange analyzing 11 listed companies.

Mrzyglod and Nowak (2017) tested the effect of dividend announcement on stock price of 56 companies that announced and completed paying dividend with 2013. The result supports both dividend signaling and informational content theory as market reacts positively (negatively) to dividend increase (decrease). Similarly, Celsing (2017) found a significant positive CAAR during dividend increase but insignificant

negative CAAR during negative and constant dividend increase on the study conducted on Stockholm Stock Exchange with 65 firms from different sectors.

Reviewing the effect of dividend announcement in different sectors, HN (2018) found that the dividend announcements made by IT companies had minimum impact on their stock prices, which shows that the dividend signaling theory has not been successful during the period of study after analyzing the impact of dividend announcement of 22 Information Technology (IT) companies on the stock prices for the period 2015 and 2016 in India.

Dangol (2018) conducted research on 139 firm dividend announcements between 2000/2001 and 2010/2011 through market model. As the paper tests the reaction to increase, decrease and no-change in dividend, the paper concludes that the Nepalese stock market adjusts in an efficient manner to new dividend information according to the dividend changes. Similarly, Celsing, (2017) conducted the study on 246 dividend announcements of the companies listed in Stockholm Stock Exchange collecting the data of 4 years which resulted that the increase (decrease) in share prices are the impact of announcement of increase (decrease) in dividend which implies that the market is semi-strong form efficient.

Om and Goel (2018) conducted a research on 60 companies listed in Bombay Stock Exchange with events study from 20 days prior to the announcement to 20 days later the announcement. The study recommends that there is no statistically significant difference between pre and post window. The findings of this study have no strong evidence that stock prices react significantly on the announcement of dividend in the stock exchange.Similarly, Marisetty, (2018) researched on 120 stock that distributed cash dividend in 2016 using event study and found that there is the existence of dividend signaling hypothesis and the market is semi-strong form efficient to adjust the dividend announcement on the share price within the event window.

Besides, many Nepalese researchers have conducted several studies over the time and have found mixed results on divided signaling, semi-strong form efficiency in case of dividend announcements. Joshi (2012) conducted a study with sample size of 163 companies and concluded that Dividend has a significant effect on market stock price in both banking and non-banking sector. Likewise, Chhetri (2015) conducted a

research on 45 companies with 399 observations over 10 years (2004-2013) and found that Nepalese market have strong dividend signaling and investors react positively (negatively) to dividend increase (decrease).

In proving the existence of semi-strong form of efficiency some recent articles have been reviewed. Zahan and Rana (2020) implied event study methodology through MAAR and CAAR to test effect of dividend announcement in Dhaka Stock Exchange in Bangladesh taking 21 listed companies which slows significant dividend signaling while some companies are efficient, and some are not. Similarly, Hariyanto and Murhadi (2021) conducted a research in 2018 in ASEAN countries and the result agreed with dividend signaling theory and reaction shown the presence of semi-strong form of efficiency in the ASEAN countries' stock markets.

In addition, Chou et al., (2021) examined the reaction from 358 companies from 2016-2018 and found strong dividend signaling and semi-strong form whereas a strong relationship of dividend yield and systematic risk on market reaction to dividend announcement which also provides insights on variables controlling the market reaction to dividend announcements. Likewise, in the research conducted by Narzary and Biswal, (2021), 80 companies were examined from 2004 to 2020 and it was revealed that the dividend announcement and payout ratio significantly impacted the stock return of the company.

2.2.2. Firm Specific Variables

In this study, firm specific variables refer to three variables; i) firm size which is determined by market capitalization of the firm, ii) dividend yield which is determined by the dividing the dividend per share by market price per share and iii) market-to-book ratio obtained from dividing market price per share by book value per share. From the past studies we can observe whether these firm specific variables have any impact on market reaction to dividend announcement.

On reviewing the articles supporting the control varibales in this study, Vieira (2011) examined 279 events from 3 different European security markets were taken. The study found out that the UK firms with negative reaction to dividend increase had higher size, lower earnings growth ratio and lower debt to equity ratio. Likewise, Doe (2015) found that dividends carry negative information to the market and company

size influences the effect and the speed with which the market reacts to dividend announcements on the Ghana Stock Exchange analyzing 11 listed companies.Bashir et. al. (2013) stated that the paskistani stock market reacts positively to dividend announcements with average positive CAR whereas the firm specificn variables are said to have impact on the market reaction to dividend announcement by examinign 73 firms listed in Karachi Stock Exchange.

Dangol, (2016) stated that the percentage of dividend changes is only the influential factor to determine abnormal returns during the dividend announcement day, whereas the variables such as dividend yield, size of the firm, market-to-book ratio, market conditions and time specification have no explanatory power on the share prices around the dividend announcement day.Dangol and Acharya, (2020) found the existence of a negative relationship between stock returns (total yield) and firm size while examining 12 banks with time duration of 10 years. Also, the study shows that the book to market equity has negative relationship with stock returns. Likewise, the study shows that the book to market equity has negative relationship with stock returns.

Poudel (2019) examined the effect of firm's characteristics and macroeconomic variables on common stock return from the firms listed in Nepal Stock Exchange (NEPSE) with 150 observations from the 10 sample firms for the period of 15 years and found that there is significant negative impact of firm size, book to market equity, earning yield, and cash flow yield on stock return in Nepalese context.

2.2.3. Market Variables

Market Variables refers to the conditions that are beyond the control of the company which can directly indirectly affect the stock market. This is external environment to the firm and in this research, market variables include i) Ruling Political Party and ii) Market Condition which refers to the increasing and decreasing trend of the market at given period of time. Some of the literatures on the related topics are reviewed for the study.

Several articles (Kim & Mei, 2001, Zach, 2003, Maqbool & Hameed, 2018, Siokis & Kapopoulos, 2007, Khalid & Rajaguru, 2010) proved the existence of significant relationship between political events, parties, elections and share price and return in

different stock markets. However, few research have been conducted to examine the impact of political party on the market reaction to dividend announcement. Kim and Mei, (2001) stated that people have different expectation as per change in political ideologies and ruling government which leads to change in market reaction on dividend change announcement.

Market condition in this research refers to the phase of the market which signifies upward or downward trend in the market which can influence every company and its share price along with investors' sentiment and expectations. Dangol, (2016) concluded that the market condition has no impact on market reaction to dividend announcement while analyzing 139 announcements from 10 years period.

2.3. Conceptual Framework

Any research or study starts with the basic idea of variables and their relation that the study tries to uncover which is shown in a figurative way. Conceptual framework thus is a base for any study and acts as blueprint in order to use specific variables, determine and hypothesize the relation among the variables which allows smoother pattern for the research. The framework has been adapted from various research like Aharony and Swary, (1980), Asquith and Mullins, (1986), Dhillon and Johnson, (1994), Amihud and Murgia, (1997) for initial hypothesis to test the relationship between dividend announcement and stock prices or return whereas the relationship between firm specific variables and market reaction has been taken from Vieira, (2011) and Dangol, (2016). There have been limited articles describing the impact of market variables on market reaction to dividend announcement. The "market condition" is derived from Dangol, (2016) whereas the variable "Ruling political party" has been tested in the research from the literatures stating significant relationship between political affairs and political parties on stock return like Kim and Mei, 2001, Zach, 2003, Maqbool and Hameed, 2018, Siokis and Kapopoulos, 2007, Khalid and Rajaguru, 2010.
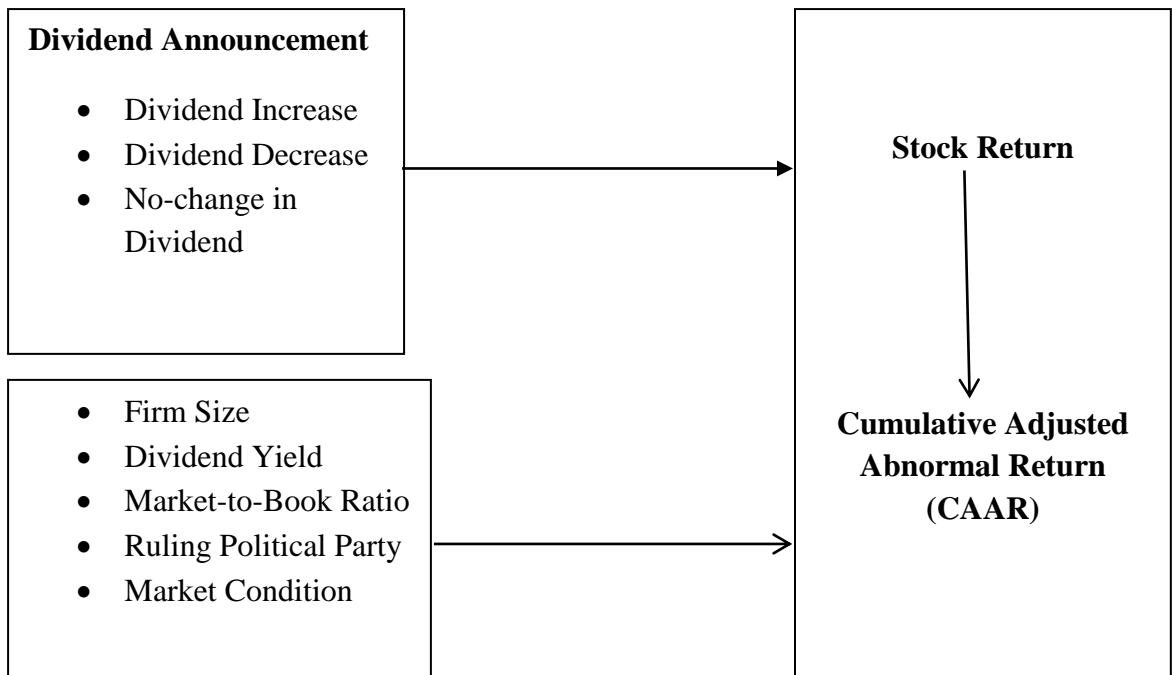
Figure 2.1: Conceptual Framework

The conceptual framework of this research has been derived from various sources which include Aharnony and Swary, (1980) for independent variable. The independent variables for the initial hypothesis are Dividend changes namely; i) dividend increase, ii) dividend decrease and iii) dividend no-change which has been analyzed thorough market model within event studies. This tests the semi-strong form of market efficiency and provides the result on whether investors can "beat" the market with publicly available information i.e. dividend announcement. The independent variables for second hypothesis have been derived from Vieira, (2011) and improvised adding market variables in it. This hypothesis tests the impact of firm variables and market variables on market reaction to dividend announcement.

CHAPTER III
RESEARCH METHODS

Research method presents the processes of selecting the field of study, population, sample, sampling technique, models, methods and techniques used in order to test the proposed hypotheses and in order to draw conclusion of the study. This section reveals the factual information about the market, population of the study, sample size, technique and methods of calculation.

3.1. Population

The population for this study has been defined as all the listed companies which have announced dividend announcement regularly for 10 years from mid-July 2010 to mid-July 2020. These companies must be listed in Nepal Stock Exchange (NEPSE). For this, the website of Nepal Stock Exchange and company's website of each company has been used. From this we obtained 30 companies which have been providing regular dividends to their shareholders.

3.2. Sample Size

The sample collected for the study has been selected from among the companies which fulfills the following criteria (Dangol, 2016):

- The company should be the one listed at the Nepal Stock Exchange Ltd (NEPSE) and should not have remained delisted for a long period of time.
- The company should be the one that has paid dividend (cash, stock or both) continuously for 10 years from fiscal year 2067/68 to fiscal year 2076/77.
- The company should be the one that has not dividend events with other potentially contamination announcements, i.e., rights-share issue, merger or acquisition, investment decision, and capital gain tax changes announcements occurring within 10 days (Confounding effect before and after 10 days of divided announcement).
- The securities of the company should be the one traded on at least 50 per cent of the floor days during the estimation period. This can avoid the sample traded very infrequently.
- The company should not have missing data (on dividend announcement date, and annual reports).

Table 3.1

NEPSE code and Sector

Stock Exchange Code	Name of the Company	Sector
NABIL	Nabil Bank Limited	Banking
SCB	Standard Chartered Bank	Banking
EBL	Everest Bank Limited	Banking
BOKL	Bank of Kathmandu Limited	Banking
NICA	NIC Asia Bank Limited	Banking
KBL	Kumari Bank Limited	Banking
SBL	Siddhartha Bank Limited	Banking
BPCL	Butwal Power Company Limited	Hydropower
CHCL	Chilime Hydropower Company Limited	Hydropower
STC	Salt Trading Company	Manufacturing
NUBL	Nirdhan Utthan Laghubitta Bitiya Sanstha Limited	Micro-finance
CBBL	Chhimek Laghubitta Bitiya Sanstha Limited	Micro-finance
DDBL	Deprocs Laghubitta Bitiya Sanstha Limited	Micro-finance
SANIMA	Sanima Bank Limited	Banking
CIT	Citizen Investment Trust	Others
SIFC	Shree Investment Finance Company Limited	Finance
GMFIL	Guheswori Merchant Banking & Finance Limited	Finance
SWBBL	Swabalamban Laghubitta Bitiya Sanstha Limited	Micro-finance
ICFC	ICFC Finance Limited	Finance
EDBL	Excel Development Bank Limited	Finance
NTC	Nepal Doorsanchar Company Limited	Other
SBI	Nepal SBI Bank Limited	Banking
GBIME	Global IME Bank Limited	Banking
CZBIL	Citizens Bank Limited	Banking
PCBL	Prime Commercial Bank Limited	Banking
MDB	Miteri Development Bank	Finance
NLBBL	Nerude Laghubitta Bikas Bank Limited	Micro-Finance
GBBL	Garima Bikas Bank Limited	Finance
KSBBL	Kamana Sewa Bikas Bank Limited	Finance
SADBL	Shangrila Development Bank Limited	Finance

Fulfilling the mentioned requirements, 30 companies with 300 observations for 10 years has been taken in consideration and the list of companies, NEPSE code and sector has been mentioned in table 3.1. From the table 3.1, it can be observed that most of the companies in the population of study belong to banking and financial sector which states that the findings of the study are mostly affected by the reaction of

market to dividend announcement of banking and financial sectors. Out of 30 companies, 12 companies are from banking sector, 8 out 30 are the finance companies, 5 are the micro finance companies, 2 hydropower companies, 1 manufacturing company and 2 companies are categorized by NEPSE as others.

3.2.1. Sample Justification

Nepal is a developing country with little to no advance development in Capital Market where there are 238 companies (as of 6th September, 2021), it is hard to fulfill the requirements. Many researchers have conducted their studies with fewer sample sizes and this study tries to exceed the sample size and analyze the impact on larger sample size. HN, (2018) conducted study on 22 IT companies for a year, Mrzygold and Nowak, (2017) with 56 samples for a year, Doe, (2015) conducted a research on 11 companies, Bashir et. al. (2013) with 73 firms, Dangol and Acharya, (2020) with 30 announcements which states that the 98 observations taken for this study can be justified through literature and is sufficient to conduct the research.

From among the 300 observation, 98 events are selected as the sample for the study as the only observations fulfilling all the criteria. The table 2 shows the process of sample selection. From table 2, we can observe that out of 300 observations, 15 observations are the events with other announcement possibly contaminating the event within the event window of 10 days, 37 observations with companies having in frequent trading and 150 observations with missing data. That concludes the total observations excluded from the study are 202 events leaving with the 98 observations to carry our research on.

Out of 300 observations, 15 observations were from the dividend events with other announcements which contaminate the effect of dividend announcements of the company. The events with other announcements like bonus adjustment, right share announcement, merger or acquisition announcement, etc. confounding effect before or after 10 days of dividend announcement are listed as the events with contaminated announcements. Besides, 37 observations in total were found to have dividend announcement from the company having infrequent trading. Infrequent trading is referred as the non-trading of the stock for more than 90 days within the estimation window. Since the website of Nepal Stock Exchange as well as the companies' website are not well developed and could not retain all the required information, 50%

of observations were from the events with missing data. Out of 300 observations, 150 observations are from the events with missing date regarding dividend announcement date, rate of dividend, reports or news from the companies and so on.

Table 3.2

Process of Sample Selection

Fiscal Years	Total Number of Dividend Events	Dividend events with other announcement	Infrequent Trading	Dividend Events with missing data	Total Excluded Dividend events	Total Number of for Analysis	Percent (%)
2010/11	30	0	2	25	27	3	3.06
2011/12	30	1	3	25	29	1	1.02
2012/13	30	4	12	9	25	5	5.10
2013/14	30	4	1	10	15	15	15.31
2014/15	30	1	7	19	27	3	3.06
2015/16	30	1	2	23	26	4	4.08
2016/17	30	3	5	18	26	4	4.08
2017/18	30	0	1	7	8	22	22.45
2018/19	30	0	3	9	12	18	18.37
2019/20	30	1	1	5	7	23	23.47
Total	300	15	37	150	202	98	100

Table 3.2 shows the reasons and process of elimination of samples for the study. The missing data, unavailable information, infrequent trading and announcement of other significant information, the companies agreeing to the requirements for the study samples are selected for further study. Due to the reasons mentioned in table 3.2, the total number of events to be excluded from the study is 202 events representing 67.33% of total observations which leaves with 32.67% of the total observation to be taken for event studies. From the 98 observations, there are 23.47% of observations from fiscal year 2019/20 which is highest in any one fiscal year from the table. The number is followed by 22.45% of total observation in fiscal year 2017/18, 18.37% in 2018/19 and 15.31% in fiscal year 2013/14 which states that effect of dividend announcement on stock return derived from this report is mostly based on the events from recent years of the study.

Table 3.3

Dividend Events and Classification

Dividend Events	Total Events	Percentage (%)
Dividend Increase	34	34.69
Dividend Decrease	57	58.16
Dividend No-Change	7	7.14
Total	98	100.00

The table 3.3 states the number of dividend events as per direction of change in dividend percentage of stocks with regards to previous year. It shows that 34 announcements are the announcement of dividend more than the previous year, which represents 34.69% of valid observations. 57 observations are from the events of dividend decrease representing 58.16% of the data and 7 events from no change in dividends than previous year representing 7.14% of total data. Here, events showing the decrease in dividend than previous year occupy more than 50% of total data. From the available data, we can state that there has been more number of dividend decrease events in recent 10 years than dividend increase or no-change events.

Table 3.4

Samples as per Industry Breakdown

Type of Companies	Number of Companies	Number of announcements	Percentage
Commercial Banks	12	44	44.90
Development Banks	5	17	17.35
Finance Companies	8	23	23.47
Hydro Companies	2	6	6.12
Others	3	8	8.16
Total	30	98	100

The study undertakes 30 companies and 98 announcements from which 44 announcements are from the 12 commercial banks, 17 announcements are from 5 development banks, 23 announcements are from finance and micro-finance companies, 6 announcements are from 2 hydropower companies and 8 announcements are from the companies listed as "others" by Nepal Stock Exchange. Announcement from commercial banks are taken in highest number followed by

finance and micro-finance companies and development banks. This implies that the findings have more implications on the market reaction and its knowledge about banks and financial institutions.

3.3. Research Design

This research employs descriptive and causal research design. It describes the variables affecting the stock return and observes the impact of dividend announcement, firm-specific variables and market variables on Stock return and market reaction to dividend announcement around the announcement window.

3.4. Data

Data is collected from the official sites of the companies and Nepal Stock Exchange in order to test relevant hypotheses for the study. For the initial study, data related to dividend announcement date and rate of dividend has been collected from official websites of the companies. The positive and negative changes in percentage dividend have been determined by comparing the yearly dividend where previous year is base year for current year's dividend. For later part of the study, the information regarding market to book ratio, dividend yield and firm size have been obtained from official website of Nepal Stock Exchange (NEPSE) and firms' annual report.

3.5. Measurement Model

The method used for calculating the effect of dividend announcement on stock return is event study method. This method is initially suggested by Fama, 1991 and further was developed by many analysts and researchers. It is used to analyze the semi-strong form of efficiency in the market through abnormal returns on the stock. The event study method is powerful tool that can help researchers assess the financial impact of changes in corporate policy. Using this method, a researcher determines whether there is an "abnormal" stock price effect associated with an unanticipated event (Mc William & Siegel, 1997).

The market model makes no explicit assumption about how equilibrium stock prices are established (Strong, 1992). From the market model used in the study, there are further 3 sub-divisions on the basis of assumption made while calculating the abnormal return from the stock. From market model, Market adjusted model

calculates the abnormal returns deducting the index return or market return from stock return on daily basis whereas Constant Adjusted Model calculated the abnormal return preparing an estimation window enough to be called normal return on an average. It then deducts the normal returns from estimation window from stock return to calculate abnormal return on event window. For this study, the constant return model is used to calculate the abnormal return on stock and Cumulative Abnormal Return (CAR).

3.6. Calculation of Abnormal Returns

In order to calculate the abnormal returns from the stock, Market model provides specific assumptions explained by Dangol, (2016) which are:

- Error term e_{it} is a mean zero, independent disturbance term in period t
- linear relationship between overall market returns (R_{mt}) and the individual stock returns (R_{it})
- the effect of firm-specific events is meant to be fully captured in the unsystematic component (e_{it})

On the basis of given assumptions, we can deduce the calculation process to following steps.

$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it}$ ....(1)

$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$.…………..(2); with $\alpha = 0$ and $\beta = 1$

$AR_{it} = R_{it} - R_{mt}$……………………(3)

Where,

AR_{it} =Abnormal returns

R_{it} = Returns for stock i on the event day t

R_{mt} = Market returns proxies average return of estimation period (t_{-200} to t_{-21})

The estimated period starts 200 days prior to the announcement date and ends of 21 days prior to the announcement date (t_{-200} to t_{-21}). The length of the estimation period used in this study is consistent with prior studies of capital market responses (Dasilas & Leventis, 2011, Dangol, 2016). Stock return is calculated on daily basis and market return is obtained from the estimation window assuming trading for at least 180 days in the year.
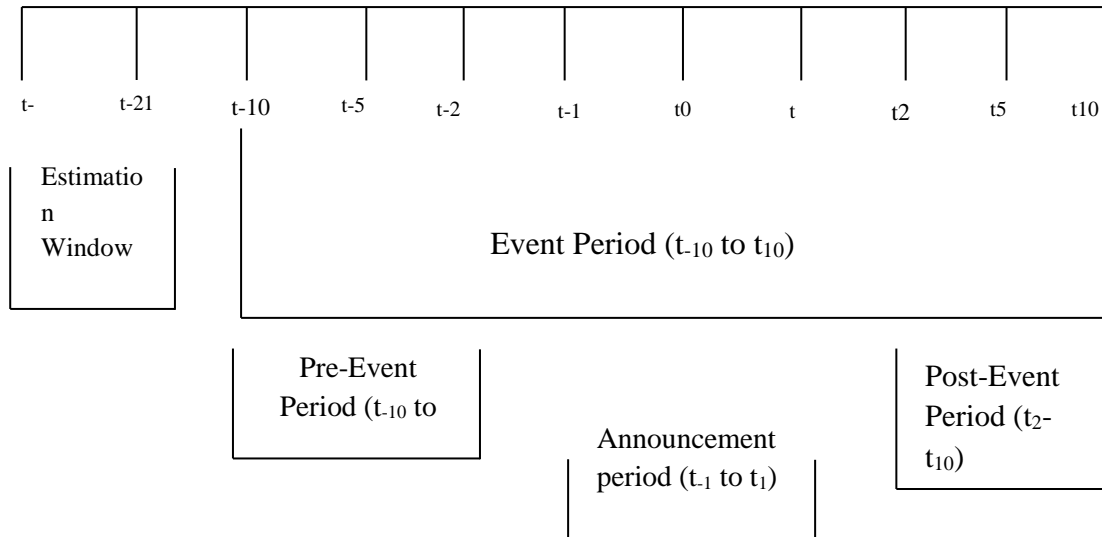
Figure 3.1: Parameter Estimation and Event Periods

Figure 3.1 shows that the day t_{-200} to t_{-21} is used as estimation window in order to calculate the normal average return on stock without the effect of the vent to be studied. Day t_{-10} to t_{-2} is used as pre-event period in order to know whether or not there has been any unanticipated transactions prior to the announcement due to leakage of information also known as insider trading. The announcement period consist of announcement date, event date and date after the event to realize the absorption and adjustment of the event on the prices of the stocks which is day t_{-1} to t_1. Post-event period consist of day t_2 to t_{10} in order to know the efficiency of the market in adjusting the information on the prices. As per theory, too soon or too late on either absorption or adjustment of the price is due to inefficiency of the market.

There are six event periods observed in order to calculate the cumulative adjusted return of the stock presented (-10, -2), (+2, +10), (-10, +10), (-5, +5), (-3, +3) and (-1, +1). Further calculation involves calculation of Average Abnormal Return (AAR or $\overline{AR_t}$) of N number of stock i at date t.

$$\overline{AR}_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it}\dots\dots\dots\dots(4)$$

Average Abnormal return ($\overline{AR}_t$ or AAR) is calculated through the mean of abnormal returns of all sample stocks on day t. Null hypothesis states that abnormal return on any given event period must be zero.

Further, Cumulative Abnormal return is calculated to measure abnormal returns over a specific time interval or holding period, the sample mean abnormal returns are summed to derive the sample mean cumulative abnormal returns (Dangol, 2016) as under:

$$\overline{CAR}_t = \sum_{t=t1}^{t2} \overline{AR}_t\dots\dots\dots\dots(5)$$

The test statistics for average abnormal return and cumulative abnormal return is calculated as under:

t-statistics for $\overline{AR}_t = \dfrac{ARt}{S(AARt)}\dots\dots\dots\dots\dots(6)$

t-statistics for CAR $= \dfrac{\overline{CAR}_t}{\hat{S}(\overline{AR}_t)\sqrt{T_2-T_1+1}}\dots\dots\dots\dots(7)$

The 10% level of significance, 5% level of significant and 1% level of significance with appropriate degree of freedom will be used to test the null hypothesis that there is no abnormal return during the event days. CAR values should be close to 0 withholding the major two assumptions of this model, i.e. the market is efficient in every manner and there is no confounding effect in event window of 21 days.

3.7 Regression Analysis

For the later part of the study, regression analysis is carried in order to find the relation and degree of effect of different firm specific variables on cumulative adjusted return of the stock. Vierra, (2011) has suggested that the firm specific and market variables have some impact on market reaction to dividend announcement which has been tested by Dangol, (2016), Dangol (2018) in Nepal too. For regression analysis, following regression equation will be applied:

$CAR_{i,-1 \text{ to } +1} = \alpha + \beta_1 SIZE_i + \beta_2 DY_i + \beta_3 MB_i + \beta_4 PP_i + \beta_5 MC_i + e_{it}\dots\dots\dots\dots(8)$

Where,

SIZE= Firm Size

DY= Dividend Yield

MB= Market-to-Book Ratio

PP= Ruling Political Party

MC= Market Condition

Here, firm size, dividend yield and market to book ratio projects the firms' internal or company specific factors supposedly responsible for change in market reaction to dividend announcement whereas market condition and ruling political party shows the market variables and their effect on market reaction to dividend announcement.

Firm Size

Market capitalization of the firm has been taken for the study as a proxy of firm size with market price on the announcement date and number of stocks on the annual report on the year before dividend announcement (Vieirra, 2011). Null hypothesis states that firm size has no impact on market reaction to dividend announcement. It states that all companies with any number of share and market price have similar reaction to dividend announcement. This involves the information content theory which states that information content for small companies is higher than for large companies, when dividend is announced. Hence, larger the firm size, smaller the effect of dividend announcement and vice versa in efficient market (Qian & Kosedag, 2009), which suggests a negative sign in regression equation for "firm size" as a variable.

Dividend Yield

Dividend yield is the major factor that changes the reaction of the market to dividend announcement (Vieirra, 2011). Dividend yield is derived from the percentage change in percentage dividend from previous year and the data has been collected from annual reports of respective companies. Higher the percentage change in dividend, higher will be the effect of dividend announcement on the price in the direction of

change in dividend. The expected sign for the variable is positive as it has direct effect on market reaction to dividend announcement.

Market-to-Book ratio

Market to Book ratio is the ratio of market price per share to book value per share. For this, market value of the share on the announcement date has been obtained from official website of NEPSE while book value per share has been obtained from annual reports of respective companies from the year before the dividend change. The market-to-book ratio is an indicator of investors' expectation of a firm's growth prospects or investment opportunities, and thus as a proxy for firm maturity and for firm's growth opportunities (Dangol, 2016) and hence is important for the study. Assuming the assumptions of free cash flow hypothesis of Jensen (1986), the market reaction to be a dividend increase must be higher for firms with fewer investment opportunities, so the coefficient of this variable is expected to be negative (Dangol, 2016).

Ruling Political Party

Internal and external political conditions have some major impacts on stock market. Dramatic transformation from market economy to socialist economy can change the corporate ownership to state ownership causing huge loss to shareholders (Kim & Mei, 2001). Based on the theory, this study tests whether the change in political parties can cause major difference on market reaction to the event study conducted. Hence, increase in dividend in rule of socialist would have higher impact than in capitalist rule and decrease in dividend in rule of capitalist would have higher impact than in socialist rule. In Nepal, the socialist party is said to be "Nepali Congress" whereas the socialist party is said to be "Nepal Communist Party" and the expected sign for this variable is positive.

Market Condition

Market condition reflects the movement of the market on constant pace for a long time. There are different names and phases in the market among which, Bull market is stated to be the condition of constant growth in market whereas bear market is stated to be the condition of constant downfall in market regarding price, volume and

investors' involvement. In this study, the market reaction to increase in dividend is higher in bear market than that in bull market whereas reaction to dividend decrease is higher in bull market than that in bear market which provides an expectation of the sign to be positive for the study (Dangol, 2016).

CHAPTERIV
ANALYSIS AND RESULTS

Data Analysis is the crucial part which provides the result of the study and processes the data in order to provide accessible information readable to the viewers. In this chapter, the hypotheses proposed in the study are tested for which market model is used for hypothesis 1 and Regression analysis is used for hypothesis 2.

4.1. Testing of Hypothesis 1: Impact of Dividend Announcement on Stock Return

Event study is applied for the study of market reaction to dividend change announcement where event date is the date following the dividend announcement date. The percentage dividend and date of announcement is obtained from the official website of the companies whereas the price of the stock as per the date has been obtained from official site of Nepal Stock Exchange. Information content hypothesis states that the dividend announcement carries enough information for increase and decrease in stock price. It states that increase in dividend carries positive information in the market about the company which increases the perceived value of the stock increasing the price of the stock and decrease in dividend decreases the perceived value providing negative information to the shareholders hence decreasing the market price of the share immediately after announcement.

Bajaj and Vijh, (1990) explain that the dividend clientele explains the change in price due to dividend change announcement whereas Qian and Kosedag, (2009) further adds that the market reaction to change in dividend depends upon the expectation of general public shareholders regarding the dividend which determines whether a dividend announcement is "good news" or "bad news" in the market. Vieira, (2011) has stated in the study that the dividend signaling hypothesis stands true in the market and market react to dividend change announcement within the announcement period. The study states that the dividend increase (decrease) should be followed by an improvement (reduction) in firm's value.

Hence, we can state that theoretically, dividend increase refers to "good news" and should lead to increase in share price, dividend decrease refers to "bad news" and should lead to decrease in share price and no-change in dividend refers to "no news" indicating to subsequent change in share price around the announcement period. The

first hypothesis is further sub-divided into 3 sections which are related to abnormal returns on stock during announcement of dividend increase, decrease and no-change.

4.2. Abnormal Returns on stock

Event study is used to determine whether there is an "abnormal" stock price effect associated with an unanticipated event. The abnormal returns (AR_{it}) represent returns earned by the firm after the analyst has adjusted for the "normal" return process. That is, the rate of return on the stock is adjusted by subtracting the expected return from the actual return. Any significant difference is considered to be an abnormal, or excess, return (McWilliams & Siegel, 1997). The positive (negative) excess return provides positive (negative) abnormal return from the stock usually obtained after unanticipated good (bad) news. The market model takes the market index such as NEPSE index, S&P 500 index as market returns to deduct from the stock returns in order to calculate the abnormal returns from the stock.

In this study, the average abnormal return of all the stocks with increased dividend announcement has been made into a group to obtain average abnormal returns from the stocks with "good news". Whereas stocks with dividend decrease announcement has been made into another group of 57 announcements to obtain average abnormal returns from 57 events with "bad new". The 7 events with "no news" are grouped together and average abnormal return is calculated for "no news" in order to test the hypothesis. The event period slabs have been taken in order to know the effect of announcement on different length of periods and as suggested by Dangol, (2016).

4.2.1. Abnormal returns: Dividend Increase

Within 21 days of event window, there is 8 days of pre-event period, 3 days of announcement period and 8 further days of post-event period. Following table shows the daily abnormal returns for dividend increase which is considered as "good news" and the adjusted return on the stock on the event date is expected to be positive. The significance of Average abnormal return and cumulative abnormal return calculated has been testes at 1% level of significance (t-value is 2.728), 5% level of significance (t-value is 2.032) and 10% level of significance (t-value is 1.691) whereas the non-parametric test has been carried out to test the significance of percentage of positive abnormal returns on the event date at 1% level of significance (z-value is 2.576), 5% level of significance (z-value is 1.96) and 10% level of significance (z-value is 1.645).

Table 4.1:

Average Abnormal Daily Returns for Dividend Increase

Days	AAR	t test for AAR	% +ve AR	z-stat
t -10	-0.55%	-2.1228**	35.29	-1.7150
t -9	-0.20%	-0.6865	52.94	0.3430
t-8	0.24%	0.7336	52.94	0.3430
t-7	-0.56%	-1.7252*	23.53	-3.0870***
t-6	-0.63%	-1.7357*	41.18	-1.0290
t -5	-0.41%	-0.8835	32.35	-2.0580
t -4	-0.07%	-0.2032	38.24	-1.3720
t -3	0.49%	1.3046	50.00	0.0000
t -2	0.21%	0.7138	41.18	-1.0290
t -1	-0.08%	-0.2540	44.12	-0.6860
t0	1.51%	2.5678**	67.65	2.0580**
t1	-0.43%	-1.0904	44.12	-0.6860
t2	-0.52%	-1.7247	26.47	-2.7440***
t3	-0.63%	-2.7443***	32.35	-2.0580**
t4	-0.28%	-1.3655	47.06	-0.3430
t5	-0.59%	-2.2021**	35.29	-1.7150
t6	-0.52%	-1.5839	52.94	0.3430
t7	0.05%	0.1463	52.94	0.3430
t8	0.21%	0.6586	47.06	-0.3430
t9	-0.65%	-2.3995**	41.18	-1.0290
t10	0.20%	0.3804	52.94	0.3430

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

The table for average abnormal daily returns for increase in dividend provides the clear view of market movement and reaction to dividend increase announcement where the average abnormal return on day t=0 is 1.51% significant at 5% level of significance. We can also observe that the percentage positive abnormal return on the event date is highest on the list which is 67.65% also significant at 5% level of significance. From among the announcement period, t=-1 has negative average return so does t=1 which suggests that the market doesn't hold loopholes for information

leakages in general and the information is effectively absorbed at the event date and was adjusted the same day due to which there is negative average returns on the day next to event date.

Prior to the event date, t=-2 and t=-3 has seen a positive abnormal returns of 0.21% and 0.49% respectively but less than that of event date (1.51%) which suggests there can be anticipation of dividend announcement or insider information with few shareholders which made the abnormal returns to be positive. But post-event period has been observed which shows continuous negative abnormal returns from t=1 to t=6 which also suggest that the market could have taken longer time to adjust the prices back to its position.

Hence, we can observe the statistically positive abnormal returns on event date of dividend increase announcement as expected. This states that the market efficiency hypothesis is found to be true in Nepalese stock market and the positive abnormal returns is only for the event date of announcement of dividend increase (good news). Since the abnormal return on t=0 is higher than return on any other date within the event window, the dividend signaling hypothesis, information content hypothesis and market efficiency hypothesis are held to be true in case of dividend increase announcement or in case of good news in Nepalese Stock Market.

The cumulative abnormal returns on six different periods have been observed which provides following information:

Table 4.2

Cumulative Abnormal Return of Dividend Increase

Period	CAR	t-stat for CAR	% positive CAR	z test
t+2, t+10	-2.74%	-2.3401**	35.29	-1.7150*
t+5, t-5	-0.81%	-0.6313	41.18	-1.0290
t+2, t-2	0.69%	0.7313	50.00	0.0000
t+1, t-1	1.00%	1.1641	52.94	0.3430
t-2, t-10	-1.49%	-1.5760	41.18	-1.0290
t-10, t+10	-3.23%	-1.7788*	38.24	-1.3720

** Significant at 5% level

* Significant at 10% level

The overall cumulative adjusted return (t-10, t+10) has the highest negative returns significant at 10% level. Here, we can observe the highest CAR is 1.00% at the announcement period (t-1 to t+1) along with highest percentage positive CAR but has not been statistically significant. It is followed by the period (t+2, t-2) with CAR of 0.69% and percentage positive CAR of 50% which also has not been proven significant statistically. The table shows different rate of abnormal returns as per different event periods where the return lies in ascending order from (t-10, t+10), (t+2, t+10), (t-2, t-10), (t+5, t-5), (t-2, t+2) and (t-1, t+1) which confirms to our expectation of highest cumulative return on the period with event date nearest to it and the farther the event date, the effect of dividend increase announcement on stock return fades. Hence it can be concluded that the announcement of increase in dividend has positive impact on stock return around the event date without being statistically significant.

4.2.2. Abnormal returns: Dividend Decrease

Dividend decrease refers to the announcement of dividend lower than expected or in our case, lower than that of previous year. Dividend decrease is supposed to be a "bad news" as its implies that the company has decreased earning or future plan doesn't seem to be much promising and hence decreasing the value of the firm which leads to decrease in market price of the share (Qian & Kosedag, 2009). Hence the effect of dividend announcement is supposed to be negative on share price of the stock.

Table 7 shows the daily abnormal returns for dividend increase which is considered as "good news" and the adjusted return on the stock on the event date is expected to be positive. The significance of Average abnormal return and cumulative abnormal return calculated has been testes at 1% level of significance (t-value is 2.66), 5% level of significance (t-value is 2.0) and 10% level of significance (t-value is 1.671) whereas the non-parametric test has been carried out to test the significance of percentage of positive abnormal returns on the event date at 1% level of significance (z-value is 2.576), 5% level of significance (z-value is 1.96) and 10% level of significance (z-value is 1.645).

Table 4. 3

Average Abnormal Daily Returns for Dividend Decrease

Days	AAR	t test for AAR	% +ve AR	z-stat
t -10	0.00%	-0.0093	50.88	0.1325
t -9	0.71%	2.2817**	54.39	0.6623
t-8	0.01%	0.0454	50.88	0.1325
t-7	0.29%	1.2885	49.12	-0.1325
t-6	-0.02%	-0.1133	49.12	-0.1325
t -5	0.13%	0.3505	42.11	-1.1921
t -4	0.25%	0.8310	49.12	-0.1325
t -3	-0.16%	-0.5487	43.86	-0.9272
t -2	0.01%	0.0278	43.86	-0.9272
t -1	-0.03%	-0.0932	47.37	-0.3974
t0	-1.33%	-2.2822**	36.84	-1.9868**
t1	0.37%	1.3418	47.37	-0.3974
t2	-0.16%	-0.5688	49.12	-0.1325
t3	-0.12%	-0.5038	50.88	0.1325
t4	0.17%	0.7531	50.88	0.1325
t5	-0.40%	-1.3324	40.35	-1.4570
t6	-0.32%	-1.4819	35.09	-2.2517**
t7	-0.28%	-1.3913	31.58	-2.7815***
t8	0.16%	0.6724	57.89	1.1921
t9	-0.30%	-1.2334	42.11	-1.1921
t10	-0.65%	-1.7936	29.82	-3.0464***

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

The table for average abnormal daily returns for decrease in dividend provides the clear view of market movement and reaction to dividend decrease announcement where the average abnormal return on day t=0 is -1.33% significant at 5% level of significance. We can also observe that the percentage positive abnormal return on the event date is one of the low percentages on the list which is 36.84% also significant at 5% level of significance. From among the announcement hold period, t=-1 has negative average return but t=1 has positive average return which suggests that the

market has leakage of information as the t-1 has a negative average abnormal return but not as low as the return on t=0. Other than that, the market reacts as it was expected to on dividend decrease announcement and the information is adjusted quickly enough on the price of the stock.

After the event date, t=2 and t=3 has seen a negative abnormal returns of 0.16% and 0.12% respectively but more than that of event date (-1.33%) which suggests there can be further adjustment or late reaction from some of the stockholders or stockholders have bigger expectations which reduces the price of the stock on consecutive days. But pre-event period has been observed which shows mixed results of positive and negative abnormal returns on the stock suggesting no common pattern of continuous decline or growth in price. It suggests that the market is somewhat efficient in case of dividend decrease announcement.

Hence, we can observe the statistically negative abnormal returns on event date of dividend decrease announcement as expected. This states that the market efficiency hypothesis is found to be true in Nepalese stock market and the negative abnormal returns is for the event date and announcement date of dividend decrease (bad news). Since the abnormal return on t=0 is lower than return on any other date within the event window, the dividend signaling hypothesis, information content hypothesis and semi-strong form of market efficiency hypothesis are held to be true in case of dividend decrease announcement or in case of bad news in Nepalese Stock Market.

Cumulative abnormal returns on different event period with test statistics has been calculated and listed along with percentage of positive CAR within the periods and non-parametric test for its significance. The table 8 shows the cumulative abnormal return for six different periods namely, $t_{+2,+10}$, $t_{+5,-5}$, $t_{+2,-2}$, $t_{+1,-1}$, $t_{-2,-10}$ and $t_{+10,-10}$ in order to test the reaction of market to dividend decrease over different period to test the semi-storng form of efficiency in the market. The expected result for $t_{-1,+1}$ is negative in case of dividend decrease in order to adjust the information in the stock price.

Table 4.4

Cumulative Abnormal Return of Dividend Decrease

Period	CAR	t-test for CAR	% positive CAR	z-test
t+2, t+10	-1.91%	-2.4540**	35.09%	-2.2517**
t+5, t-5	-1.27%	-1.2944	47.37%	-0.3974
t+2, t-2	-1.14%	-1.4552	43.86%	-0.9272
t+1, t-1	-0.99%	-1.2078	47.37%	-0.3974
t-2, t-10	1.22%	1.5658	50.88%	0.1325
t-10, t+10	-1.68%	-1.4460	40.35%	-1.4570

** Significant at 5% level

The cumulative abnormal returns presented on the table 4.4 show that all the event period except (t=-2 to t=-10) are negative. This derives a strong point for lack of leakage of information on this event period and the existence of insider information doesn't apply within the period in case of dividend decrease announcement in Nepalese stock market. The lowest CAR is -1.91% with a 35.09% positive CAR statistically significant 5% level on the event period (t+2, t+10) as it incorporates the adjustment period or post-event period. This somehow explains that the adjustment of the information on the price takes longer time in case of dividend decrease announcement. The lowest CAR is followed by event period (t-10, t+10) which is 1.68%, (t-5, t+5) with -1.27% CAR, (t-2, t+2) with -1.14% CAR and (t+1, t-1) with - 0.99% of CAR. The highest drop is seen in the announcement period and the rate of decline in CAR is decreased over the period as the event period gets longer.

4.2.3. Abnormal returns: Dividend No-change

No-change in dividend refers to no new adjustment or changes on percentage dividend than previous year which suggests that the shareholders should have constant valuation on the stock as there is no change on future scope of the firm. This implies that there is "no news" to which there should not be any changes in stock returns during the vent window of 21 days.

Following table shows the daily abnormal returns for no change in dividend which is considered as "no news" and the adjusted return on the stock on the event date is expected to be near to zero. The significance of Average abnormal return and

cumulative abnormal return calculated has been testes at 1% level of significance (t-value is 3.499), 5% level of significance (t-value is 2.365) and 10% level of significance (t-value is 1.895) whereas the non-parametric test has been carried out to test the significance of percentage of positive abnormal returns on the event date at 1% level of significance (z-value is 2.576), 5% level of significance (z-value is 1.96) and 10% level of significance (z-value is 1.645).

Table 4.5
Average Abnormal Daily Returns for No Change in Dividend

Days	AAR	t test for AAR	% +ve AR	z-stat
t -10	0.51%	0.5247	57.14	0.3780
t -9	-0.52%	-0.5757	28.57	-1.1339
t -8	-1.99%	-1.2571	42.86	-0.3780
t -7	-0.34%	-0.5330	71.43	1.1339
t -6	-0.05%	-0.1117	42.86	-0.3780
t -5	-3.84%	-0.9996	28.57	-1.1339
t -4	-1.36%	-1.6675	42.86	-0.3780
t -3	-0.62%	-0.5189	42.86	-0.3780
t -2	0.85%	0.8398	57.14	0.3780
t -1	0.96%	1.1225	57.14	0.3780
t0	2.01%	1.4659	57.14	0.3780
t1	0.05%	0.0894	57.14	0.3780
t2	-0.06%	-0.0710	57.14	0.3780
t3	1.23%	0.8245	71.43	1.1339
t4	-0.21%	-0.1535	42.86	-0.3780
t5	0.10%	0.0954	28.57	-1.1339
t6	1.34%	1.3580	71.43	1.1339
t7	1.81%	1.1845	71.43	1.1339
t8	-1.04%	-1.0633	42.86	-0.3780
t9	-0.22%	-0.3689	42.86	-0.3780
t10	0.91%	0.7662	71.43	1.1339

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

In the table 4.5, t=0 is highly positive on average adjusted returns with no statistical significance and percentage positive abnormal return on day t=0 is more

than 50% which suggest that the dividend announcement of no change in dividend is perceived as "good news" and has positive impact on stock return. Here, the adjusted return before and after the event date is near to zero and only the event date has highly positive return. Moreover, the market is not adjusted immediately as the adjusted return on the stock is negative from t=-9 to t=-3 in the pre-event period whereas the adjusted return is mostly positive during the post-event period. The event has not brought any new public information due to which theoretically there should be no abnormal returns on the stocks which is not found in this study as there is sudden decrease in abnormal returns before the announcement and increase in abnormal return on the event date and post-event period. The highest AAR is observed on t=0 of 2.01% while the lowest return is observed on t=-5 which is -3.84%.

Here, we can state that the dividend signaling hypothesis and information content hypothesis plays the role as there have been abnormal returns around the event window but the semi-strong form of efficient market hypothesis doesn't apply as the market is not addressing and adjusting the information on the price as per the direction of change in dividend announcement.

Hence we can state that the Nepalese market is not efficient in case of no-change in dividend announcements and there might be the leakage of information which leads to negative and positive abnormal returns before, after and during the announcement period. The test statistics has not proven any of the result to be statistically significant. Hence in case of "no news" or no-change in dividend announcement, the Nepalese stock market is not efficient in both absorbing and adjusting the information on the price of stock.

The cumulative abnormal returns and test statistics on different event period is calculated and tested along with the percentage positive CAR and non-parametric test which is shown in the table 4.6.

Table 4.6:

Cumulative Abnormal Return for No Change in Dividend

Period	CAR	t-test for CAR	% positive CAR	Z-test

t+2, t+10	3.86%	0.7314	57.14	0.3780
t+5, t-5	-0.88%	-0.1569	71.43	1.1339
t+2, t-2	3.81%	2.1218*	71.43	1.1339
t+1, t-1	3.02%	1.5561	57.14	0.3780
t-2, t-10	-7.35%	-1.6301	28.57	-1.1339
t-10, t+10	-0.47%	-0.1248	42.86	-0.3780

* Significant at 5% level

Table 4.6 shows that the pre-event period is highly negative but the announcement period and post-announcement period are highly positive. The only event period (t+2, t-2) which is positive by 3.81% has been statistically significant at 10% level of significance. The post event period has less percentage positive CAR while the pre-event and announcement period has more percentage positive CAR without being statistically significant. The rate of increase in CAR as the periods are added to the event date is decreasing. With the table, we can conclude that the market has insider information due to which leakage of information prior to announcement date can be seen. The market is inefficient in absorbing and adjusting the information in case of no-change in dividend announcement or in case of "no news" in Nepalese stock market.

Since the number of announcements with no-change in dividend is lower than that of dividend increase and decrease, most of the returns calculated on "no news" were unable to be statistically significant. Since market reaction is tested statistically, the dividend increase and decrease are proven to provide the expected market reaction due to which abnormal returns move on the direction of dividend announcements. Good news or increase in dividend creates a positive abnormal return in the stock whereas bad news or decrease in dividend creates a negative abnormal return in the stock while the results are statistically significant at 5% level of significance. Whereas the market is not seem to be efficient in case of No-change dividend announcement and the results are not statistically significant. Due to which it can be summed up that Nepalese stock market is efficient on adjusting the dividend announcement on the price of the stock while the dividend signaling hypothesis or information content hypothesis stays true in case of dividend increase and dividend decrease.

4.3. Visual Representation of Daily Change on AAR due to Dividend Announcement

The results from the study are presented in figures which give clearer picture of market reaction to dividend announcement.

4.3.1. Daily Changes in AAR due to Announcement of Dividend Increase

Figure 3 shows the fluctuations in daily abnormal returns in the market with reference to dividend-increase announcement. The X-axis represents the event days whereas the Y-axis represents the daily AAR along the event days.
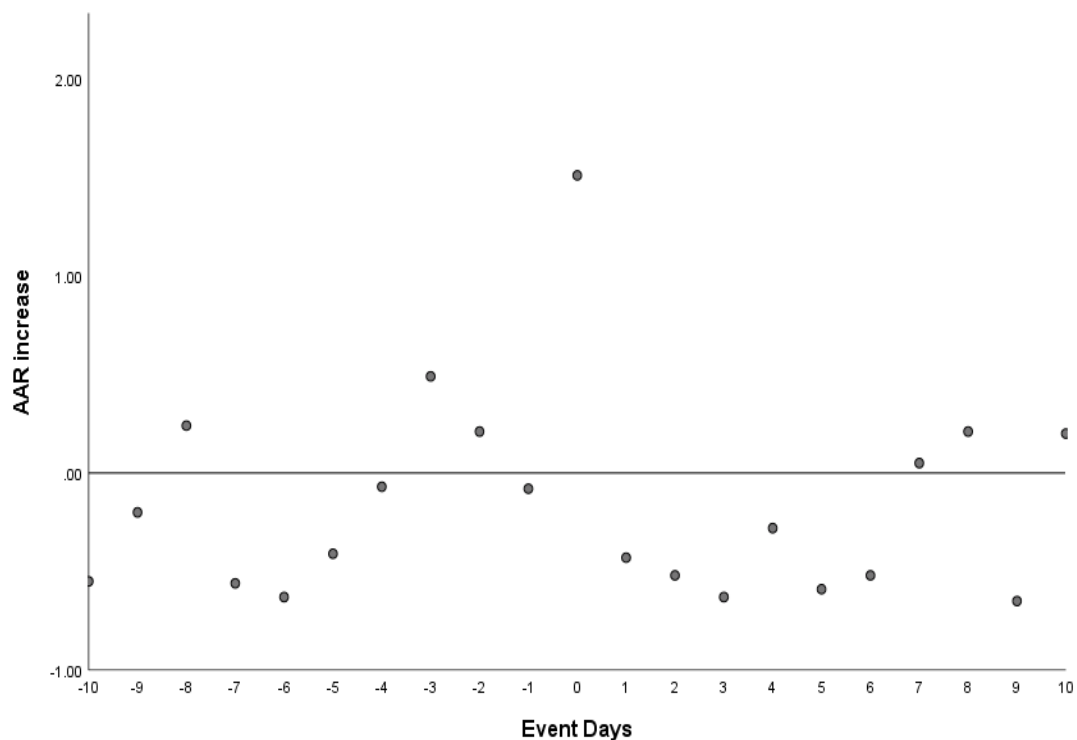
Figure 4. 1: Daily Change in AAR Due to Announcement of Dividend Increase

Figure 4.1 shows that there is maximum AAR on event day (t=0) where most of the AAR lies below the origin which represents negative AAR. This indicates the confirmation of semi-strong form of EMH in case of announcement of increase in dividend. It also confirms the dividend signaling as well as information content hypothesis and the market seems to adjust the information quickly enough.

4.3.2. Daily Changes in AAR due to Announcement of Dividend Decrease

Figure 4 shows the fluctuations in daily abnormal returns in the market with reference to dividend-decrease announcement. The X-axis represents the event days whereas

the Y-axis represents the daily AAR along the event days where the event day should adjust the information and the stock return on the event day (t=0) must be negative.
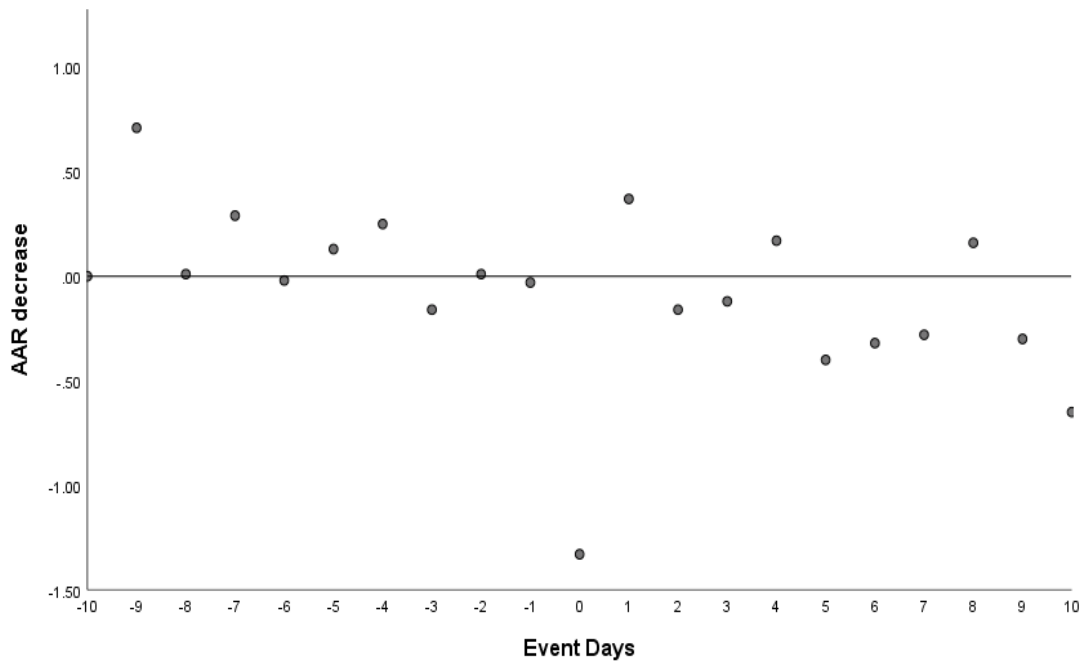
*Figure 4.2:*Daily Change in AAR Due to Announcement of Dividend Decrease

Here in figure 4.2, we can observe that the information has been adjusted in the event day with the lowest AAR within the event window. The figure shows that the returns following the event day as well as before the event day is more or less within the market return or AAR is near to zero. This confirms dividend signaling, information content hypothesis as well as semi-strong form of EMH in Nepalese stock market in case of announcement of decrease in dividend.

4.3.2. Daily Changes in AAR due to Announcement of Dividend No-Change

The figure 4.3 shows the reaction of market when the company announces same percentage dividend as previous fiscal year. In an efficient market, the return is expected to lie within the market return in the event day (t=0). The result of this study is shown in the figure 4.3.
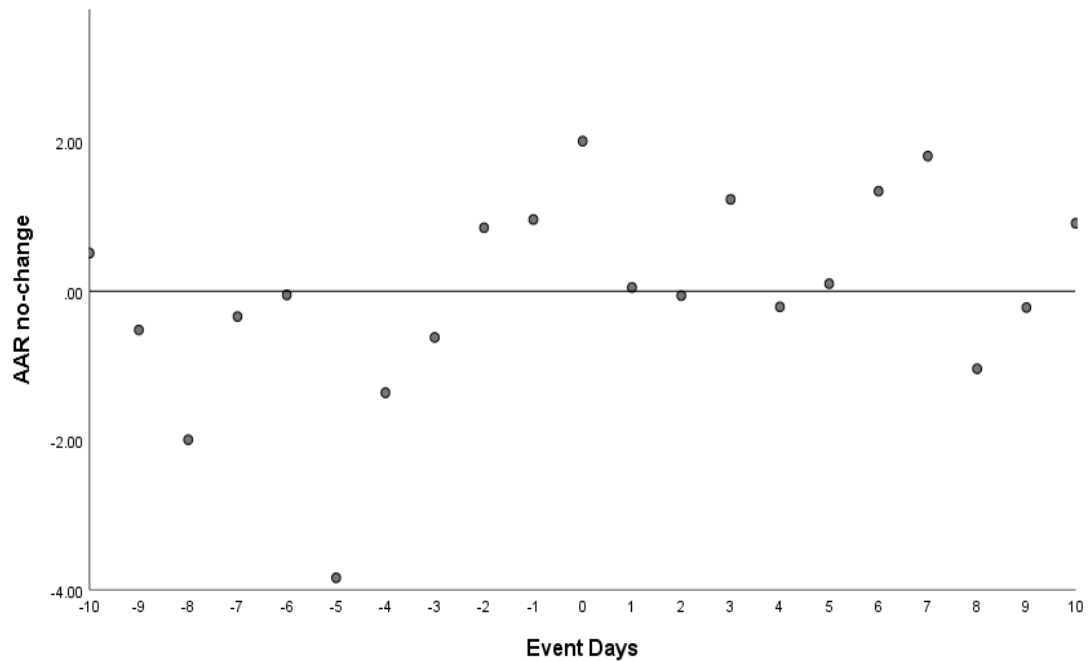
Figure 4.3: Daily Change in AAR due to Announcement of Dividend No-Change

Figure 4.3 shows that the market has positive return (AAR) on the event day (t=0) but the overall pattern of the data states relatively normal distribution of returns along the event window. In this case, the market seems to be relatively normal with no significant increase or decrease of AAR on the event date and lies within the range of fluctuation of AAR during the window. This also confirms that without significant information about increase or decrease in dividend, the stock return doesn't changes significantly confirming the dividend signaling, information content hypothesis and semi-strong form of EMH in Nepalese market.

From an overall point-of-view, the Nepalese stock market seems to be efficient in semi-strong form where the stock return increases (decreases) with the announcement of increase (decrease) in percentage dividend than last year.

4.4. Regression Analysis

Regression analysis helps to determine the relationship between two variables, the direction of change in dependent variable as per change in independent variable and degree of impact with statistical significance at given margin of error. In the table 11, Durbin-Watson test is done in order to test the autocorrelation in the residuals from the regression analysis.

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Table 4.7

Regression Table for Firm and Market Variables dependable at CAR

Coefficient	Models							
	1	2	3	4	5	6	7	8
Constant	0.001	-0.027	0.017	0.03	-0.004	-0.021	-0.009	-0.007
	0.00*	0.031*	0.07	0.918	0.817	0.154	0.688	0.857
Dividend Change	0.264	0.226	0.29	0.262	0.27	0.236	0.253	0.252
	0.009*	0.022*	0.004*	0.014*	0.009*	0.017*	0.013*	0.02*
Firm Size						-0.097	-0.09	-0.089
						0.324	0.367	0.37
Dividend Yield		0.249				0.229	0.18	0.175
		0.012*				0.023*	0.138	0.163
Market to Book Ratio			-0.209				-0.085	-0.09
			0.034*				0.48	0.472
Ruling Political Party				-0.005				-0.018
				0.964				0.874
Market Condition					0.034			0.018
					0.737			0.863
F-Value	7.172	7.107	6.028	3.55	3.61	5.065	3.905	2.555
	0.009*	0.001*	0.003*	0.033*	0.031*	0.003*	0.006*	0.025*
Adjusted R^2	0.06	0.112	0.094	0.05	0.051	0.112	0.107	0.088
Durbin-Watson (D-W)	2.057	2.056	2.049	2.056	2.051	2.01	2.011	2.012
N	98	98	98	98	98	98	98	98

* Significant at 5% level

The F-test is done to test the overall quality of the regression model and p-value is calculated to test the significance of the study within the 5% level of significance. The regression analysis contains 8 different models with one or more independent variables at each model.

Model 1 on the regression table shows the relationship between dividend change and cumulative abnormal returns which states that a unit changes in dividend changes Cumulative Abnormal return by 0.264 which states a high positive relation between the two variables. The model is significant at 5% level with F-value of 7.172. The adjusted R^2 stated that the regression model explains 6% variability in dependent variable due to independent variable. Durbin Watson value is 2.057 which states that there is relatively negative autocorrelation in the residuals from regression analysis but the test can still be considered as relatively normal. From the result, we can state that the null-hypothesis is rejected stating that there is significant relationship between dividend change and CAR.

Model 2 explains the relationship between CAR, dividend change and dividend yield in which the Y-intercept of regression line is -0.027 significant at 5% level. The unit change in dividend changes CAR by 0.226 whereas unit change in dividend yield changes CAR by 0.249, both being significant at 5% level. The model is significant at 5% level of significance with F-value of 7.107 which rejects the null hypothesis of this model. The adjusted R^2 for this model is 0.112 which states that 11.2% of variability in the variables is explained by the regression. The DW value of the model is 2.056 which suggest that the data is relatively normal with slightly negative autocorrelation in the residuals of regression analysis. This explains that both dividend change and dividend yield has positive relation with CAR and the increase (decrease) in dividend yield increases (decreases) the CAR.

Model 3 explains the impact of Market to book ratio on CAR in which Y-intercept is 0.017 which is not statistically significant. The regression model explains that a unit change in market-to-book ratio of the firm results to 20.9% change in CAR in negative direction, significant at 5% level explained by standardized beta coefficient of -0.209. The overall model is explained by F-test with F-value of 6.028 significant at 5% level. The model has adjusted R^2 of 0.094 which means that the regression model explains 9.4% of total variability in the variables. The DW test explains that the data is relatively normal with DW value of 2.049. This states that the null hypothesis is rejected explaining that increase in market-to-book ratio decreases the stock return whereas decrease in marker-to-book ratio increases the stock return. Hence, market to book ratio has significant impact of CAR.

Model 4 explains the impact of ruling political party on market reaction to dividend change where dividend change has significant positive impact on CAR. The standardized beta coefficient of ruling political party is -0.005 which is not statistically significant in the model. The overall model is significant at 5% level with F-value of 3.55 which states that the overall model is significant with no significant impact of ruling political party on market reaction to dividend change. The Adjusted R^2 is 0.05 which states that 5% of variability is explained by the regression model. The DW value of the model is 2.056 which can explain the normality of the residuals of regression analysis. The value explains that the data is relatively normal. This result explains that the null hypothesis for impact of political party on stock return is not rejected. Hence, Ruling political party has no significant impact on market reaction to dividend change announcement.

Model 5 presents the impact of Market condition on market reaction to dividend changes when dividend change has direct positive relation with stock return. The Y-intercept is -0.004 which is not significant statistically. The beta coefficient of market condition on CAR is 0.034 which is not significant statistically. The model is significant at 5% level with f-value of 3.61 which states that the null hypothesis is not rejected. The R^2 of this model is 0.051 which explains 5.1% of variation in the model. The DW test signifies that the data is 2.051 which explainthat the data is relatively normal. This states that the null hypothesis is not rejected which signifies that market condition has no significant impact on market reaction to dividend change announcement.

Model 6 explains the impact of dividend change, dividend yield and firm size on CAR. The Y-intercept of -0.021 in the model is not significant statistically. The beta coefficient of firm size is negative but is not statistically significant whereas beta coefficient of dividend yield is positively significant. The overall model is tested with f-value of 5.065 statistically significant at 5% level of significance which states that there is positive relationship between dividend yield and Car whereas no impact is seen on CAR from firm size. Durbin-Watson value of the model is 2.01 which explain that the data is relatively normal for regression analysis.

Model 7 presents the impact of all 3 firm-specific variables present in the study on CAR. The Y-intercept is -0.009 which is not significant at 5% level. Among the 3

variables, firm sixe has beta coefficient of -0.09, dividend yield has beta coefficient of 0.18 and Market-to-book ratio has beta coefficient of -0.085 out of which, none of the variables have significant impact on market reaction to dividend change announcement. The model has been tested significant with F-value of 3.905 at 5% level of significance. Here, R^2 of 0.107 states that the regression model explains 10.7% of variations in the variables. The DW value represents the relative normality of the data. This explains that only dividend yield, among all the firm-specific variables, have significant impact on market reaction to dividend change announcement.

Model 8 presents the multi linear regression model which explains the impact of all the given variables (firm-specific and market-specific) on market reaction to dividend announcement. In this model, the Y-intercept is -0.007 not proven statistically significant. The beta coefficient of dividend change is 0.252, statistically significant, which states a unit change in dividend results to 25.2% change in CAR in same direction, beta coefficient of firm size is -0.089 which is not significant statistically, and beta coefficient of dividend yield is 0.175, statistically insignificant along with market variables which resulted to have no significant impact on CAR. The overall model has been tested with F-value of 2.555 statistically significant at 5% level. The adjusted R^2 of the model is 0.088 which implies that the regression model explains 8.8% of variations that has been adjusted for the number of predictors in the model.

Hence, none of the firm-specific and market-specific factors have significant impact on market reaction to dividend change announcement. This implies that the change in stock return due to dividend announcement is independent to any firm-specific variables and market variables and is caused only due to the announcement of dividend and the information content in the dividend announcement.

4.5. Findings of the Study

The study tests the semi-strong form of EMH in context of dividend announcement as public information in Nepalese Stock market. After analysis of 98 announcements from 30 companies over a period of 10 years and regression analysis of variables stated by market anomalies, we came to find following information on efficiency of Nepalese stock market:

- Dividend announcement carries enough information for the shareholders to impact the stock prices and return within the event window significantly in the direction of dividend announcement. Hence, dividend signaling hypothesis holds true in Nepalese Market.

- Information content hypothesis holds true in context of Nepal because as Pettit, (1972) announcements of dividend increases are followed by a significant price increase and announcements of dividend decreases are followed by a significant price drop which was seen in the study.

- The announcement of dividend increase has significant positive impact on stock return with AAR of 1.51% on event date and $CAR_{-1,+1}$ of 1% which shows semi-strong form of efficiency in case of announcement of dividend increase.

- The announcement of dividend decrease has significant negative impact on stock return with AAR of -1.33% on event date and $CAR_{-1,+1}$ of -0.99% which shows semi-strong form of efficiency in case of announcement of dividend decrease.

- The announcement of no-change in dividend has insignificant positive impact on stock return with AAR of 2.01% on event date and $CAR_{-1,+1}$ of 3.02% which shows that the market is not semi-strong form efficient in case of announcement of dividend no-change. The overall distribution of AAR is random in case of no-change in dividend.

- The firm size has no significant impact on market reaction to dividend announcement.

- Dividend yield has no significant impact on market reaction to dividend announcement.

- Market-to-book ratio has no significant impact on market reaction to dividend announcement.

- Ruling political party has no significant impact on market reaction to dividend announcement.

- Market condition or phase has no significant impact on market reaction to dividend announcement.

- Hence, none of the firm-specific variableshave any significant impact on market reaction to dividend announcement.

- Market-specific variables don't have any significant impact on market reaction to dividend announcement confirming the existence of semi-strong form of EMH in Nepalese stock market.

The findings of the study have confirmed with many studies disagreeing with many other studies which has been discussed on Chapter V.

CHAPTER V
DISCUSSION, CONCLUSION AND IMPLICATIONS

This section presents the results that are processed earlier in Chapter IV through regression analysis and Cumulative abnormal return approach. Companies pay dividend in order to utilize the free cash flow of the company, to satisfy the shareholders and to state the sound economic condition of the company to its shareholders raising its book value and market value per share.

5.1. Discussions

This study tries to understand the reaction of the market on dividend change and its announcement. For this, event study model is used in where the date and event types are collected from company's website whereas the price of the stock on respective date has been collected from official site of NEPSE. The constant-return model of market method is used for the calculation and estimation window of t_{-200} to t_{-21} has been used.

The study has tested the effect of dividend announcement on stock return where the 3 hypotheses have been tested. The initial null hypothesis is further divided into 3 hypotheses and the findings on three hypotheses on impact of dividend announcement on stock return are discussed and compared with other literatures and their findings.

The finding states that there is significant increase in stock return due to announcement of dividend increase with overall Average Abnormal Return (AAR) of 1.51% from 34 dividend increase announcement samples. This research also confirms that the stock price adjusts the prices effectively enough with negative abnormal return on day t+1. The Cumulative Abnormal Return (CAR) from day t-1 to day t+1 is 1% on the average which states that there is positive market reaction to increase in dividend and market reacts quickly enough to settle the available information. Here, the semi-strong form of EMH holds true in Nepalese context in case of increase in dividend announcement. The finding is consistent with many researchers like Hussin et. al., (2010), Dangol, (2018), Anh et. al., (2016), Mrzygold and Nowak, (2017), Hariyanto and Murhadi (2021), Chou et al., (2021) and Chhetri (2015) which states the existence of semi-strong form of EMH in the market which leads to increase in share price and sttock return around dividend announcment in case of dividend

increase announcment. Likewise, the finding is inconsistent with many other researches like Chen et at. (2010), Suwanna (2012), Kadioglu et al., (2015), HN (2018), Om and Goel (2018) and Doe (2015). Since the findings are inconsistent with most of the international studies, we can say that the difference may have occurred sue to change in country specific variables and also due to the difference in sample size.

The study accepts that announcement of decrease in dividend leads to decrease the stock return around event window. The Average Abnormal Return (AAR) on the event day (t0) is -1.33% from 57 dividend announcement samples of dividend decrease which confirms the null hypothesis. This study also confirms that the prices adjust quickly enough since the adjusted abnormal return for day t+1 is positive. But, the prices of the stock started to fall since t=-1 due to which the hint of insider information can be obtained in case of dividend decrease announcement. The Cumulative Abnormal Return (CAR) at (t-1 to t+1) is -0.99% which signifies the dividend signaling theory which states that the stock prices decreases around dividend announcement of dividend decrease. Since the market absorbs the information "too soon" but efficiently adjust to the information within the event day, it can be said that there is existence of insider information in Nepalese market but the market adjusts efficiently which means the market is relatively efficient in semi-strong form in case of announcement of dividend decrease. The finding of this study is consistent with Hussin et. al., (2010), Dangol, (2018), Anh et. al., (2016), Mrzygold and Nowak, (2017), Hariyanto and Murhadi (2021), Chou et al., (2021) and Chhetri (2015) which can be explained by similar country context and number of sample whereas inconsistent with Chen et at. (2010), Suwanna (2012), Kadioglu et al., (2015), HN (2018) and Om and Goel (2018) which can be explained by change in country specific variables, time gap between the studies and number of samples taken in the study.

The study states that the announcement of no-change in dividend has significant positive impact on stock return as the Average Abnormal return (AAR) on the event day (t0) is 2.01% analyzing 7 announcements of no-change in percentage dividend. This states that the semi-strong form of EMH doesn't hold true in case of announcement of no-change in dividend. Along with that, the $CAR_{-1,+1}$ is 3.02% which explains that the information on no-change in dividend increases the stock

return significantly around the announcement period. Here, the dividend signaling and information content hypothesis is not found to be applicable along with semi-strong form of EMH. The finding that market is in-efficient holds consistent with Suwanna, (2012) and Dangol, (2016) whereas inconsistent with Dangol, (2018) and Hussin et. al., (2010). But the AAR is seems to be distributed randomly during the event window which suggests that the market is relatively efficient in case of announcement of no-change in dividend announcement.

The findings on the effect of firm specific variables on market reaction to dividend announcement are discussed as per different hypotheses set earlier. The regression analysis was conducted in order to determine the impact of firm-specific and market variables on market reaction to announcement of dividend change. The following hypothesis was tested and the results have been discussed and compared with literatures.

Market capitalization of the firm on the event date was taken as proxy for firm size and the linear regression was run where the firm size had negative relationship with CAR which was not statistically significant. Hence, the study doesn't reject null hypothesis stating the firm size doesn't have any significant impact on market reaction to dividend announcement. Dividend yield of the company is the percentage dividend divided by market price per share. In this research, dividend yield has positive impact with regression coefficient of 0.249 which is statistically insignificant at 95% confidence level. Hence, the null hypothesis is not rejected in this case stating that dividend yield has no significant impact on market reaction to dividend announcement. This alternative hypothesis signifies the relationship between market-to-book ratio and market reaction to dividend announcement. From the regression analysis, it can be stated that the study doesn't reject null hypothesis stating that there is no significant impact of market-to-book ratio of the company on market reaction to dividend announcement. The alternative hypothesis states the impact of ruling political party on market reaction. Since there has been frequent change in ruling political party, the study tries to test the impact of change in political party on market reaction to dividend change through regression analysis. The study doesn't reject the null hypothesis which means that the ruling political party has no significant impact on market reaction to dividend announcement. The change in phases in market has

proven to have significant impact on change in stock returns by literature (Vieira, 2011). Hence, this study tries to understand the market reaction to change in market condition where the null hypothesis is not rejected as the study proves that there is no significant impact of market conditions (phases) on market reaction to dividend changes.

The findings are inconsistent with Chou et. at., (2021) which stated a strong impact of dividend yield on market reaction to dividend announcement, partly consistent with Dangol, (2016) and inconsistent with Vieira, (2011), Doe, (2015), Dangol and Acharya (2020) as it presents strong negative impact of firm size on market reaction to dividend announcement. This can be explained by the perception of investors in different country upon the firm-specific variables and market variables and its importance. Hence, it can be stated that the market variables as well as firm-specific variables in this research have no significant impact on market reaction to dividend change announcement in Nepalese stock market. This finding implies that around dividend announcement window, the change in dividend has major impact on stock return in same direction whereas there is no impact of market variables and firm variables on market reaction to dividend change announcement.

5.2. Conclusion

The main objective of this research was to test the semi-strong form of market efficiency in Nepalese market in reference to dividend announcement and absorption and adjustment of price as per dividend change within the event window.

The result presented in the study supports dividend signaling hypothesis and information content hypothesis which states that the stock price changes significantly on the same direction during announcement of dividend change. Hence, it can be said that the dividend announcement carry enough information to affect the share price within the event window. To test the hypothesis, market model was applied where constant return method was used to calculate the CAR from 98 total announcements from where it was found that the $CAR_{-1,+1}$ was 1.00% in case of dividend increase announcement confirming to the EMH, -0.99% in case of dividend decrease announcement confirming to the EMH and 3.02% in case of dividend no-change against the efficiency rule of EMH. Hence, Nepalese stock market is not fully

efficient but is relatively efficient. The semi-strong form of EMH is fulfilled in case of dividend increase and decrease whereas the EMH doesn't hold true in case of dividend no-change. In case of firm specific and market specific variables, none of the firm-specific variables and market variables was found to have any significant impact on market reaction to dividend change. This means that any investors in Nepalese stock market cannot beat the market with publicly available information and this statement holds true for any types of firms at any condition of the market.

Hence, it can be concluded that Nepalese stock market is semi-strong form efficient where announcement of dividend change has significant impact on stock return whereas no other variable are affecting the market reaction to dividend announcement. Hence, the debate on whether Nepalese market is semi-strong form efficient along with whether dividend signaling hypothesis and information content hypothesis hold true remains to be continued as the market is not as efficient as it should be in case of announcement of constant (no-change) dividend.

5.3. Implications of the Study

Dividend announcement is one of the vital information made public in order to disseminate the future prospect and growth of the company to its shareholders. Miller and Modigliani (1961) suggest that dividends may provide a vehicle for communicating management's superior information concerning their assessment of the firm's prospect. Based on the findings of the study, the implications can be divided into two parts:

- **Practical Implications**

The research presents the importance of dividend announcement on change in stock return which is vital information for shareholders. The change in percentage dividend is the most important factor in determining the change in stock return on the same direction. Although the dividend announcement increases the stock return, market adjusts the information quickly enough which makes it harder for investor to beat the market and gain excess return as the market turns negative following the event day of dividend increase. However, the pattern can be studied in order to gain from the positive CAR from no-change in dividend. Hence, the investors can gain abnormal

profit from the research in some cases as the market is not completely efficient in semi-strong form.

- **Future Research Implications**

Since the debate on dividend signaling, information content and semi-strong form of EMH remains alive, there exists a larger and better scope of researching the issues presented in the study. Further this study has been conducted within the companies listed in NEPSE while the larger approach of research on Asian countries or further can be approached with extension of any other variables that might have significant impact on market reaction to the announcements made by the companies. The time-series analysis is possible to know the condition of the market before and after the development of Information Technologies (IT) and many infrastructural impacts can also be tested in further research.

Hence, this research can be studied to learn the market, its behavior and to know the impact, learn whether or not is it possible to beat the market along with further research in addition to the research to prove or criticize the theories on secondary market.

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APPENDICES

Appendix I

List of companies that provided dividend continuously for 10 years with percentage dividend

	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20
Comp any	2067 /68	2068 /69	2069 /70	2070 /71	2071 /72	2072 /73	2073 /74	2074 /75	2075 /76	2076 /77
NABIL	30	60	65	65	36.84	45	48	34	34	35.26
SCB	50	60	50	51.5	44.21	35.08	105.26	17.5	22.5	11.84
EBL	60	31.58	60	62	35	70	33	20	25	10.53
BOKL	34.75	26.32	14.74	10.96	27.37	23	13.25	25	17	16
NICA	20	25	20	30	41.05	27.37	21.05	10	21.05	20
KBL	8.44	7	14	34.74	11.58	21	12.75	8.5	10.52	14
SBL	15.79	8.42	22.11	23.16	21.05	39	14	13.16	25.26	15
BPCL	25	25	18	15	20	27	20	28	28	25
CHCL	70	50	40	35	27	20	25	25	25	20
STC	45	25	25	20	25	25	35	35	35	25
NUBL	13.68	10.92	31.58	52.63	61.9	31.58	80.71	42.11	40.53	13.68
CBBL	25	42.1	48	45	52.7	52.7	45	40	44	29
DDBL	28	25	35	50	52.63	52.63	31	20	45	20
SANIMA	6.5	5.5	10.53	15	21.05	15.79	16	14	21.05	13.6
CIT	35	38.89	52.63	41.84	23	23.157	23.22	23.16	23.16	17.895
SIFC	22.13	15.79	20.4	12.63	12.22	11.05	26.57	10	13	10.53
GMFIL	15.79	15.79	17	25	15.79	12.63	15.79	5.26	6.5	11.4
SWBBL	31.58	31.58	27.36	70	52.63	53.68	31.57	36.84	40	20.01

ICFC	15	8.42	15.79	14.74	7.55	17.89	10	8	13	15
EDBL	25	25	52.64	36.84	27.36	26.31	31.7	17	18	12.63
NTC	45	48	46	47	50	51	55	55	45	40
SBI	17.5	17.5	20	22	28.42	29.53	16.23	15.79	16.84	9.47
GBIME	12.02	13	15	25	23	16	20	16	25.5	16
CZBIL	10.53	13.42	15	18.95	21.05	16.63	16.85	5.2	15	15
PCBL	12.63	11.58	15	20	18.95	18.46	27	16	16	15
MDB	10.53	21.05	25	26.32	31.58	31.58	33.14	17.89	19.5	15.79
NLBBL	52.11	25.79	58.19	46.31	46	31.05	20.68	10.67	20.79	8.42
GBBL	18	25	25	21.05	20	20.8	15	13.75	16.84	14.21
KSBBL	15	15	21	22.11	22.6	21.58	12	9.5	6.8	4.63
SADBL	61	28.89	33.81	21.3	20.85	16.92	20.33	9.45	8.96	5.26

Appendix II

List of announcements as per firm-specific and market-specific variables

Event Dates	Dividend Change	Firm Size	Dividend Yield	Market to Book Ratio	Political Parties	Market Conditions	AAR	CAR
8/12/2017	70.18	92932594960	4.54%	7.5069	Congress	Bull Market	0.13%	-1.07%
21/10/2019	5	44062868300	4.09%	2.9399	Communist	Bull Market	-2.60%	-2.62%
25/08/2014	2	45030977500	2.48%	8.4374	Congress	Bull Market	2.07%	-2.52%
15/11/2016	35	99527825595	1.84%	12.0852	Communist	Bull Market	-2.52%	-3.91%
16/12/2018	11.75	22986911675	7.69%	1.7121	Communist	Bull Market	5.24%	8.20%
28/10/2014	11.75	19000957440	4.99%	3.8957	Congress	Bull Market	2.68%	1.50%
31/7/2014	10	21959744000	3.16%	5.0000	Congress	Bull Market	-0.21%	-4.71%
27/8/2019	11.05	39489002289	4.71%	2.6386	Communist	Bull Market	-0.06%	-2.20%
16/9/2014	20.74	11372225040	5.59%	3.8395	Congress	Bull Market	9.49%	11.13%
28/8/20	2.02	17631713	5.18%	1.485	Commu	Bull	0.07	0.71

Date								
19		393		7	nist	Market	%	%
6/11/2020	3.48	29797717810	5.88%	1.7440	Communist	Bull Market	1.57%	0.87%
15/9/2014	1.05	13510974320	3.11%	4.5152	Congress	Bull Market	-0.87%	-8.25%
17/9/2019	11.66	28884714625	7.77%	1.9144	Communist	Bull Market	6.54%	6.12%
1/12/2015	5	8868080310	3.77%	2.5854	Congress	Bull Market	2.34%	0.31%
9/12/2018	8	9695596640	6.41%	1.4502	Communist	Bull Market	1.94%	3.04%
19/10/2014	21.05	5036640000	3.51%	9.2099	Congress	Bull Market	3.53%	7.12%
11/9/2019	4	11540400000	4.50%	4.0936	Communist	Bull Market	-0.19%	-0.58%
26/10/2014	15	2285204868	3.76%	7.8338	Congress	Bull Market	0.96%	-1.05%
11/12/2019	25	6751872792	5.15%	4.3385	Communist	Bull Market	9.79%	12.30%
3/9/2019	7.05	2840445670	5.93%	2.3869	Communist	Bull Market	4.98%	2.29%
15/10/2013	13.74	5100000000	3.10%	2.6394	Congress	Bull Market	0.45%	5.34%
10/12/2020	4.9	1600000000	5.70%	1.3523	Communist	Bull Market	4.42%	7.36%
24/11/2014	42.64	2693269923	3.90%	5.6453	Congress	Bull Market	-0.33%	-1.32%
10/11/2016	1.05	7497120000	2.24%	8.4279	Communist	Bull Market	-6.85	-8.72

							%	%
3/10/2019	3.16	5792058480	4.34%	3.3024	Communist	Bull Market	1.81%	1.01%
14/11/2019	5	1429118640	8.02%	1.1156	Communist	Bull Market	1.89%	0.03%
7/12/2020	2	2733180900	5.08%	2.0915	Communist	Bull Market	3.47%	-2.39%
2/2/2020	1	2960592380	4.93%	2.7333	Communist	Bull Market	4.28%	8.03%
1/8/2015	3	92400000000	8.12%	1.1408	Congress	Bull Market	-1.91%	-0.44%
24/11/2014	2	80605849770	2.31%	5.5741	Congress	Bull Market	1.95%	3.07%
30/9/2019	1.05	10494814968	4.25%	2.3615	Communist	Bull Market	-1.79%	-0.11%
11/11/2014	5	12929629020	4.08%	3.5748	Congress	Bull Market	2.32%	-0.29%
18/9/2014	1.32	784963872	5.45%	3.2633	Congress	Bull Market	-3.98%	-6.38%
3/11/2019	3.09	11766912538	3.99%	3.1153	Communist	Bull Market	0.86%	2.11%
4/12/2018	-14	1720000000	3.95%	3.3137	Communist	Bull Market	-0.27%	-1.41%
14/9/2011	-20	21334726000	3.77%	5.8114	Communist	Bull Market	-9.46%	-6.29%
23/2/20	-9.13	79169791	1.57%	10.97	Commu	Bull	-	4.56

16		900		08	nist	Market	1.43%	%
11/11/2018	-87.76	50632241392	2.77%	3.5534	Communist	Bull Market	-8.18%	-10.01%
30/10/2020	-10.66	52554984736	1.80%	3.4801	Communist	Bull Market	-4.09%	-6.00%
2/11/2018	-13	47438762103	3.38%	3.0110	Communist	Bull Market	-5.32%	-3.61%
5/11/2020	-9.47	57173895900	1.56%	3.0849	Communist	Bull Market	-6.02%	-7.08%
2/9/2019	-8	20399646542	6.72%	1.4564	Communist	Bull Market	0.48%	3.03%
1/10/2020	-1	24102222468	5.67%	1.6842	Communist	Bull Market	9.33%	7.15%
18/11/2018	-11.05	33570069060	2.39%	2.7457	Communist	Bull Market	0.11%	-3.01%
20/10/2020	-1.05	56459555796	3.44%	3.2758	Communist	Bull Market	0.43%	4.90%
3/12/2018	-8.25	19868750388	5.18%	1.5067	Communist	Bull Market	1.26%	0.09%
10/1/2019	-4.25	21974499943	3.36%	1.8516	Communist	Bull Market	3.29%	2.13%
6/12/2020	-10.26	35823227586	4.10%	2.6819	Communist	Bull Market	-1.21%	-0.08%
8/12/2014	-3	9202726500	2.73%	2.8205	Congress	Bull Market	-5.09%	-3.06%

19/12/2020	-3	11996952540	5.59%	1.6620	Communist	Bull Market	-0.13%	0.51%
15/10/2013	-10	22014720000	3.17%	3.6874	Congress	Bull Market	0.62%	4.78%
6/4/2021	-10	22624673632	0.21%	17.4340	Communist	Bull Market	-10.78%	-13.36%
28/9/2018	-38.6	12276000000	4.12%	4.5446	Communist	Bull Market	2.69%	2.19%
15/9/2019	-1.58	12645000000	4.81%	3.5846	Communist	Bull Market	1.48%	0.94%
10/1/2021	-26.88	22221450000	1.04%	4.9425	Communist	Bull Market	-4.42%	-4.98%
16/9/2014	-3	3212372427	2.94%	7.0663	Congress	Bull Market	2.81%	13.32%
14/9/2018	-5	9650000000	4.15%	4.4286	Communist	Bull Market	3.30%	1.74%
29/11/2018	-11	4148292360	3.39%	3.3994	Communist	Bull Market	-4.86%	-7.99%
11/2/2021	-25	22812784878	1.01%	9.3084	Communist	Bull Market	-9.99%	-14.61%
4/11/2018	-2	25684029834	4.36%	2.2750	Communist	Bull Market	-1.55%	-3.03%
15/10/2020	-7.45	30364764450	3.94%	2.3821	Communist	Bull Market	-0.02%	-0.04%
13/3/2019	-0.06	29100720000	0.88%	4.2050	Communist	Bull Market	-0.19	0.09%

							%	
4/4/2021	-5.2653	1.40218E+11	0.42%	7.2446	Communist	Bull Market	-2.26%	-5.64%
5/10/2018	-16.57	1150200000	7.04%	1.0915	Communist	Bull Market	-2.84%	3.19%
6/12/2020	-2.47	1649779650	5.29%	1.4470	Communist	Bull Market	-5.89%	0.66%
20/12/2020	-19.99	12599144100	1.26%	5.8467	Communist	Bull Market	-10.20%	-11.58%
1/11/2014	-1.05	1131034840	5.56%	1.8868	Congress	Bull Market	-2.31%	-12.63%
1/8/2017	-7.89	2357244666	2.72%	2.0363	Congress	Bull Market	1.53%	0.82%
20/11/2014	-15.08	982500000	5.62%	3.8356	Congress	Bull Market	8.39%	12.80%
17/9/2018	-14.7	2008754310	5.86%	2.0902	Communist	Bull Market	-4.10%	-7.89%
9/4/2021	-5.37	4501722660	2.28%	3.4287	Communist	Bull Market	8.29%	14.01%
15/10/2013	-2	91050000000	7.58%	1.6976	Congress	Bull Market	1.07%	2.72%
3/3/2021	-5	1.7985E+11	3.34%	1.8617	Communist	Bull Market	-6.24%	-3.27%
16/12/2018	-0.44	32831373216	3.87%	2.5659	Communist	Bull Market	1.11%	2.63%
18/9/20	-7	36682323	3.12%	3.630	Commu nist	Bull	-	-

16		039		6	nist	Market	2.44 %	6.13 %
5/12/2018	-4	2773173120	5.13%	1.8796	Commu nist	Bull Market	-1.25 %	2.36 %
1/8/2011	-2.4	4380000000	4.81%	2.0660	Commu nist	Bull Market	2.53 %	-2.88 %
12/12/2018	-7.65	14881632855	2.42%	1.3650	Commu nist	Bull Market	-3.96 %	-3.81 %
9/12/2011	-6.37	4132172640	6.86%	1.6615	Commu nist	Bull Market	-3.06 %	-2.85 %
26/10/2016	-0.49	24084204950	2.84%	4.4101	Commu nist	Bull Market	-0.57 %	0.63 %
21/12/2018	-11	25465557513	5.05%	2.1683	Commu nist	Bull Market	-0.38 %	0.75 %
21/9/2018	-15.25	1465000000	6.11%	2.0948	Commu nist	Bull Market	-3.00 %	3.03 %
6/12/2020	-3.71	2787352224	3.93%	2.7468	Commu nist	Bull Market	-4.35 %	-6.48 %
11/9/2018	-1.25	4276232390	7.09%	1.4508	Commu nist	Bull Market	1.69 %	2.96 %
27/12/2020	-2.63	9812925882	4.69%	2.1811	Commu nist	Bull Market	-1.83 %	-1.93 %
9/4/2019	-2.5	3603823920	6.60%	1.1178	Commu nist	Bull Market	0.76 %	-0.51

							%
13/11/2019	-2.7	3505469514	4.93%	1.1396	Communist	Bull Market	-1.45%	-4.31%
19/12/2020	-2.17	5512223801	2.13%	1.8011	Communist	Bull Market	-3.03%	-0.48%
20/12/2018	-10.88	3834769050	6.18%	1.2206	Communist	Bull Market	7.87%	11.76%
20/12/2019	0.49	3727495772	6.27%	1.1125	Communist	Bull Market	1.42%	0.71%
28/2/2021	-3.7	5720272525	2.52%	1.5389	Communist	Bull Market	-3.88%	-5.67%
29/8/2014	0	75021286008	2.64%	9.8088	Congress	Bull Market	1.90%	1.11%
12/12/2018	0	25733584019	3.85%	2.8759	Communist	Bull Market	6.84%	7.35%
28/10/2016	0	12534537920	2.50%	9.3362	Communist	Bull Market	7.14%	12.82%
18/12/2018	0	1.176E+11	7.02%	1.1560	Communist	Bull Market	1.01%	1.08%
13/10/2012	0	12179168045	3.38%	3.0207	Communist	Bull Market	-2.08%	-0.13%
25/11/2019	0	21770240019	5.90%	1.8597	Communist	Bull Market	-0.63%	-0.78%
15/10/2013	0	330000000	16.67%	1.0396	Congress	Bull Market	-0.11%	-0.34%