CHAPTER I

INTRODUCTION

1.1 General Background

Stocks are one of the widely availed and popular investment alternatives among the host of financial assets available. It is, therefore, stock return has always been an interest to investors or individuals involved directly or indirectly with market activity and performance. The stock return, market behavior and price movement are always sensitive to the fundamental changes. Furthermore, because of the dynamic nature of stock returns, stock performance has drawn attention of scholars, economists, financial analyst, general individuals and researchers, both for theoretical and empirical reasons since it influences the country's growth and development in long term as well as it serves as a mirror of the country's current economic activities in the short term period.

The study of stock return occupies an important place in financial management and it plays vital role in the development of financial market. Financial market, as such, is a mechanism by which saving in one sector of the economy flow to another sector of the economy. Two types of security: debt securities and equity securities are traded in the financial markets. Financial market can be classified into two types: money markets and capital market. Money market is created by a financial relationship between suppliers and demander of short-term funds, which have maturity of one year or less. Most of the money market transaction are made in marketable securities, which are short-term debt instruments such as treasury bills, commercial paper and negotiable certificates of deposit issued by government, business firms and financial institution. The money market exist, because certain individual, businesses, governments and financial institutions have temporary idle funds that they wish to place in some type of liquid assets or short-term interest earning instruments. At the same time, other individuals, businesses, government and financial institution find themselves in need of seasonal temporary financing. Thus, money market brings together the supplier and demander of short-term liquid funds.

On the other hand, capital market is the place where financial claims and obligation are bought and sold that has maturity period of more than one year. Capital markets are the markets for long-term debt and for equity shares. Capital market plays a crucial role in mobilizing a constant flow of saving and channeling these financial resources for expanding productive capacity in the country. In the capital market long-term securities are transacted, which have maturity period of more than one year. The instruments used in capital market are debt, common stock, preferred stock, bonds and convertible issues.

Stock market is a part of financial market where different stocks are traded. It serves as a link between suppliers and users of capital funds. Stocks are issued first in the primary market by private and government sectors to meet their long term capital requirements and they are then traded in the secondary market to generate liquidity, profitability, diversification and risk minimization purposes. It is a mechanism for the mobilization of public savings and channelizing them in productive investments. Thus, stock market works as a powerful mediator between investors and users of finance.

Studies of the different stock markets demonstrate significant relations between stock returns and several fundamental variables. Some of these variables explain stock returns better than beta. For instance, Basu (1975, 1977 and 1983) found that stocks with low price-earnings ratios (P/Es) have higher average returns than stocks with high P/Es. Banz (1981) demonstrates that stocks of firms with small market value of equity (MVE) have higher beta-adjusted returns than stocks of large firms. Fama and French (1992) indicate that book-market ratio (B/M) has the strongest relation with the expected stock returns in the United States. Furthermore, B/M and MVE combine to capture the explanatory power of the earnings-price ratio (E/P), financial leverage, and beta for stock returns. In another study, Fama and French (1993) provided economic rationale for their findings by showing that B/M and MVE substitute for stock returns' sensitivity to risk factors and that these variables are also related to earnings. Chan (1991) showed that expected stock returns in Japan are positively related to B/M and cash flow yield. Mukerji (1997) study indicates that Korean stock returns are positively related to B/M, debt-equity ratio (D/E) and sales-price Ratio (S/P) and negatively related to MVE. Their results demonstrates that for Korean stocks ,B/M and

S/P are more reliable measures of fundamental value than E/P and asserts that D/E is a more consistent substitute for risk than beta. They also found evidence of greater leverage and smaller size result in higher returns for both value and growth stocks. Based on these studies, this study focuses on the relation between fundamental variables and stock returns in Nepalese Market.

When we take a look at the evolution of the asset pricing models, it was first in 1960's that the finance world met an extensive theory on the issue, the single period, mean–variance efficient capital asset pricing model (the CAPM), proposed by Treynor (1961), Sharpe (1964), Lintner (1965), Mossin (1966) and Black(1972). The model proposed a simple, yet elegant linear relation between the cross-section of returns and the sensitivity of individual stock returns to changes in the market portfolio return, beta. The simplicity and theoretical appeal of the model proposed by the CAPM is yet unmatched. However, many simplifying assumptions were made in the derivation of CAPM. One of the basic premises of the model is that market betas were the only measure of risk needed to explain the cross-section of expected stock returns. The capital asset pricing model assumes that investors consider only systematic risk, measured by beta. The model predicts a positive relation between stock returns and beta which has been rejected by a good number of empirical tests such as Banz (1981), Basu (1977), Fama and French (1992, 1993, 1995).

An important theory that followed the CAPM is the Arbitrage Pricing Theory (APT) of Ross (1976). The notion of arbitrage pricing filled the absence of the long sought for theoretical basis for multi-factor return generating models. Some of the studies have taken macro-economic factors like consumption growth, investment growth as explanatory variables of returns, for ex. Ferson and Harvey (1997), Hamao (1988), Geske and Roll(1983), Fama (1981) while others examined company specific variables like book to market ratio, debt to equity ratio, earning price ratio, firm size, sales to price ratio e.g. Basu (1977), Reinganum (1981), Banz (1981), Fama and French (1992,1993,1995). Our study here examines the cross-section of returns in Nepal Stock Exchange (NEPSE) Ltd. and field of the study, the NEPSE, is an emerging market with characteristics different from those of established markets such as the New York Stock Exchange or Tokyo Stock Exchange where the bulk of the empirical tests on assets pricing were conducted. Emerging markets offer higher yields and demonstrates

higher volatility of returns; returns are often auto correlated and not integrated to global markets. The crisis prone nature of the Nepalese market characterized by the high degrees of political and economic instability might have a remarkable effect on the set of variables that proxy for equity risk. So, we will test the explanatory powers of several company specific variables, including firm size, book to market ratio, earning to price ratio and cash flow yield.

Thus, there has been considerable evidence that the cross-section of average returns are related to firm-level characteristics such as size, earning/price, cash flow/price, dividend/price, book-to-market equity, leverage both in the developed and emerging markets around the world. Hence, fundamental variables are an important sources of information in determining stock market returns and useful to investors and other market participants in deciding their investment strategies

1.2 Evolution of Security Market in Nepal

The history of securities market in Nepal is more than six decades old but the organized stock market is a recent phenomenon in Nepal. Biratnagar Jute Mills and Nepal Bank Limited are the pioneer companies in floating shares in the market. In 1937 A.D, Tejarath was set up to facilitate loans to the government employees and was converted into Nepal Bank Limited. The then HMG Nepal (now Government of Nepal) introduced the Company Act in 1964 A.D and the first issue of government bonds made in the same year through Nepal Rastra Bank to collect the developmental expenditures. HMG (now GoN) Nepal announced the industrial policy in 1974 A.D and under this policy an institution named Securities Marketing Center (SMC) was established to deal in government securities - development bonds, national savings bonds and corporate securities of few companies.

The government has the virtual monopoly over the security market. Then, Securities Exchange Center (SEC) was established in 1976 A.D with an objective of facilitating and promoting the growth of capital market. It was the only capital market institution in Nepal. Securities Exchange Act came into force in 1984 A.D. Since then, SEC started to operate under this act. The purpose of this act was to provide systematic and

favorable market environment for securities ensuring and protecting the interest of individuals and institutional investors as well as to increase the public participation in various firms and companies.SEC had provided facilities to trade the government securities and few of corporate securities like shares and debentures. Only the shares of 10 companies were listed in SEC and there was involvement of no broker and dealer in the securities market. So, SEC itself was undertaking the job of brokering, underwriting, managing public issue, market making for government bonds and other financial services (NEPSE 1998). Apart from this, there was the absence of effective secondary market to ensure liquidity to the securities.

The interim government (1990/91) initiated financial reform program and two indirect investment vehicles – Citizen's Investment Fund and NIDC Capital Markets Ltd. were established with the collective investment schemes in the corporate sector. Then, due to the world whim of privatization and economic liberalization, the operation of SEC was felt to change to make it compatible with the changing economic system. As a result, HMG (now GoN) Nepal brought about change in the structure of SEC by dividing it into two distinct entities- Securities Board, Nepal (SEBO/N) and Nepal Stock Exchange Limited (NEPSE) at the policy level in 1993 A.D. Since then they are operating as the main constituents of securities market in Nepal. SEBO/N was established on June 7, 1993 with its mission to facilitate the orderly development of a dynamic and competitive capital market and maintain its credibility, fairness, efficiency, transparency and responsiveness under the Securities Exchange Act, 1983. It is an apex regulator of the securities market in Nepal. It registers the securities and approves the public issues. Moreover, SEBO frames the policies and programs required to monitor the securities market, provides license to operate stock exchange business and stock brokers and supervises and monitors the stock exchange operations and securities business persons.

On the other hand, NEPSE Limited is a non-profit organization, operating under Securities Exchange Act; 1983.The basic objective of NEPSE is to impart free marketability and liquidity to the government and corporate securities by facilitating transactions in its trading floor through market intermediaries such as brokers and market makers. NEPSE opened its trading floor on January 13, 1994 through its newly appointed licensed members and has adopted an 'Open Out–Cry' system for the transaction of securities. The trading floor is restricted to listed corporate securities and

government bonds with the market intermediaries in buying and selling of such securities.

1.3 Statement of Problem

Since the early 1970's, numerous studies on the stock market have been conducted with the most focusing on stock returns because it is important to both investors and business organizations to know what influences their investment returns and company stock value. Although many previous empirical studies have investigated the relationship between stock returns and fundamental ratios such as P/E ratio, dividend yield and book to market ratio, the results are ambiguous.

Among the various empirical contradictions, the cross-sectional relationship between stock returns and fundamental variables has been studied extensively in the US, Japan and other developed countries. However, can the same fundamentals explained in developed countries will affect stock returns in under-developed country like Nepal as well, with its very different environment? In general, positive relationship has been observed between equity returns and earnings yield, cash flow yield and book to market ratio, and a negative relationship between equity returns and size, e.g., Basu (1977, 1983), Banz (1981), Reinganum (1981), Cook and Rozeff (1984), Lakonishok and Shapiro (1986), Banz and Breen(1986), Jaffe, Keim, and Westerfield (1989), and Ritter and Chopra (1989). The traditional mean-variance analysis developed by Markowitz (1956) and SLB Model (Sharpe (1964), Lintner (1965) and Black (1972)) have indicated that the returns are determined by risk (beta) factors. However, Ross (1976) and other empirical studies by Fama (1991), Chan, Hamao and Lakonishok (1991), and Fama and French (1992) have suggested that the fundamental variables such as earnings yield, size, book to market value, cash flow yield and leverage etc. are the important determinants of the stock returns.

The shortcomings of accounting earnings have motivated a number of recent papers to explore the relationship between cash flow yields and stock returns, for e.g. Bernard and Stober (1989) and Wilson (1986). They observed more significant positive relationship of stock returns with cash flow yield than that of earnings yield.

Rosenberg, Reid and Lanstein (1984) studied the relationship between stock returns and book to market ratio. They found most significant positive relationship between stock returns and book to market ratio. The selection of such fundamental variables has been guided more by any explicit theoretical model. Ball (1978), Fama (1991) and Fama and French (1988) have suggested the reasons why such variables might help to predict returns. In particular, yield surrogates such as the earnings yield and the dividend yield are correlated with returns because they proxy for underlying risk not otherwise accounted for by traditional measures such as beta.

In developed countries, the cross sectional relationship between the stock returns and different fundamental variables have been extensively studied. Among them, Stattman (1980), and Rosenberg, Reid and Lanstein (1985) have found that average returns on the US stocks are positively related to the firm's book to market ratio. The study by Chan, Hamao and Lakonishok (1991) related the cross-sectional differences in stock returns on Japanese stocks to the underlying behavior of four fundamental variables: earnings yield, size, book to market ratio and cash flow yield. Of the four variables considered, book to market value ratio and cash flow yield have been found to be most significant positive impact on expected returns. Basu (1983) found that the earning-price ratio (E/P) helps to explain the cross-section average returns on the US stocks.

According to SLB Model returns are positively related to risk, but the study by Fama and French (1992) did not find the same. The study attempted to indicate the extent to which the size and book to market equity has captured the cross-sectional variation in average returns for the period of 1983-1990. Davis (1994) observed that book to market ratio, earnings yield and cash flow yield have significant explanatory power with respect to the cross section of realized stock returns during the period of July 1940 to June 1963.

A study by Banz (1981) documented that size (market equity) determines the average returns. Stocks with larger market equity have lower average returns and the stocks with smaller market equity have higher average returns. In other words, his study revealed negative relationship between size and average returns. The size effect became weaker when beta and expected returns were allowed to vary over time (Jagannathan and Wang: 1996, 53). Ball (1978) revealed that earning price (E/P) was

likely to be higher for stocks with higher risks and expected returns. Wiggins (1991) also revealed that the market adjusted stock returns are directly related to E/P and they have positive relationship. Similarly, Verma (1994) observed positive relationship between profitability and dividends. Though these studies were conducted in developed capital markets, their relevance is yet to be seen in a smaller and under-developed capital market like Nepal.

In Nepal, the listing of shares in NEPSE and their trading in the stock market is a recent phenomenon. The Nepalese stock market is characterized by a low trading volume, absence of professional brokers, early stage of growth, limited movement of share prices, and limited information available to investors. A number of studies are available on government owned public enterprises but studies on enterprises whose stocks are listed in NEPSE and traded in stock market are yet to come up in Nepal. Viewed in this way, this study is expected to provide at least some insight into the fundamentals of stock returns in Nepal.

In Nepalese context, Pradhan (1993) attempted to verify some of the above mentioned results for the first time in Nepal. His study mainly indicated that stocks with larger price earnings ratio seemed to have lower liquidity, profitability, assets turnover and interest coverage, and higher leverage. It was reported that there is a negative relationship between dividend yield and size (market equity). Timilsina (1997) revealed that the relationship between dividend per share and stock price is positive, and dividend per share affects the share price variedly in different sectors. Manandhar (1998) observed that dividend per share, return on equity and dividend yields have the significant impact on market capitalization, whereas, price- earnings multiple has no significant impact. The study also observed negative relationship between dividend yield and market value, and positive relationship between dividend per share and market value of equity. Similarly, Adhikari (2007) indicated that the stocks with larger dividend yield have higher earnings, liquidity, assets turnover and interest coverage. However, the study indicated negative relationship between dividend yield and leverage. Clearly, these studies have attempted to deal with only a few relationships described earlier.

The general conclusion of the above-mentioned empirical studies is that stock returns are determined not only by a single factor but by a number of different fundamental variables. This study therefore aims at analyzing the relationship of stock returns with the underlying behavior of fundamental variables by estimating summary statistics and various regression models in the context of Nepal.

To sum up, this study deals with the following issues:

- What are the relationships of stock returns (i.e. dividend yield, capital gain yield and total yield) with fundamental variables (i.e. size, book to market equity ratio, earning to price and cash flow yield)?
- Are there equal contributions of earnings yield and cash flow yield in predicting stock returns? If not, what could be the reasons for the discriminations?
- What are the roles of size and book to market equity ratio in explaining the stock returns?
- Is there any relationship between earning yield and stock returns?
- Is there any relationship between size and stock returns?
- What kind of relationship exists among earnings yield, size, book to market equity ratio and cash flow yield?
- Is there any relationship between book to market equity ratio and stock returns?
- Is there any relationship between cash flow yield and stock returns?
- Is there any relationship between dividend yield and total yield?
- Is there any relationship between capital gain yield and total yield?

1.4 Objective of the Study

The major objective of this study is to analyze the relationship of stock returns with the underlying behavior of fundamental variables in the context of Nepal. The specific objectives are as under:

- To examine if the measures of stock returns like dividend yield, capital gain yield and total yield are related to fundamental variables like earnings yield, size, book to market ratio and cash flow yield.
- To measure the effect of fundamental variables on stock returns of the selected companies.
- To evaluate the role of yields and earnings to price ratio on stock returns.
- To conduct a survey of financial executives on the effect of yields, earning to price and size on stock returns.

1.5 Limitations of the Study

A research is a vast study investigating the subject matter for solving perceived research problems. Each and every study has its own limitations. No study can be free from constraints. This study also has some limitations .The main limitations of this study are mentioned as below:-

- This study doesn't cover all the listed companies in Nepal Stock Exchange. It therefore implies that the conclusions drawn are of the tentative nature and firm generalization should be avoided for the entire companies. Similarly, each of the selected enterprises doesn't represent the entire industry in which it falls.

- In order to make a study on fundamental analysis of Nepalese Stock returns more fruitful, it is essential that the data should be of frequent time intervals. Here again, such types of monthly or quarterly data couldn't be obtained and due to this study has been forced to use the annual data which are available in profit and loss account, balance sheets and other statements. The use of annual data in this study is thus likely to make the conclusions somewhat less valid

and less reliable. In the absence of monthly or quarterly data, many of approaches to this study could also not be employed

- This study doesn't cover all the Nepalese enterprises listed in NEPSE Limited because of data problem and the study periods for each selected enterprises are not homogenous in nature due to the absence of valid and reliable data.

- This study is mainly based on secondary data. However, primary data has also been used on limited basis to verify the reliability and validity of secondary data results.

- Due to time and finance constraints, all related aspects with regard to fundamental analysis of stocks returns can't be covered in depth.

- This study covers only five years period from 2005/2006 to 2009/2010.

- The same data provided by NEPSE Limited, Securities Board Nepal (SEBON) and the individual companies sometimes also differ. It has influenced on the accuracy and reliability of the data/results.

- Unavailability of the latest data and literature are other limitations of this study.

1.6 Organization of the Study

The study has been organized into five chapters, each devoted to some aspects of the study on fundamentals of stocks returns of listed companies in Nepal Stock Exchange. The titles of each of these parts are as follows:

Chapter I : Introduction of the study

Chapter II : Review of Literature

Chapter III : Research Methodology

Chapter IV : Presentation and Analysis of Data

Chapter V : Summary, Conclusion and Recommendations

The contents of each of these chapters are briefly described in following paragraphs:

Chapter I: This is the introductory chapter of the study. This chapter describes major issues to be investigated and includes general backgrounds, statement of the problems, objectives of the study, limitations of the study and organization of the study.

Chapter II: It contains review of related literature which has been organized into four parts: conceptual framework, the review of related studies in general and in connection to Nepalese context and finally research gap analysis in our field of study.

Chapter III: This chapter describes methodology employed in the study. It deals with research design, nature and sources of data, selection of enterprises, methods of analysis and definitions of key terminologies.

Chapter IV: This chapter deals with presentation and analysis of data and major findings of the study. It consists of three sections. Section 1 examines the role and impact of fundamental variables on dividend yield, capital gain yield and total yield. The analysis of summary statistics for portfolios sorted by fundamental variables has been described in Section 2 while Section 3 analyzes the properties of portfolios formed on dividend yield, capital gain yield and total yield of selected Nepalese companies listed in Nepal Stock Exchange Limited.

Chapter V: This chapter includes summary, conclusions and recommendations of the study which will summarize the whole thesis report, presents the concluding remarks with a suggestive package for future avenues as recommendations.

CHAPTER II

REVIEW OF LITERATURE

2.1 Conceptual Framework

Most of the investment decisions are based on future returns. So, return is the motivating force in the investment process, i.e. it is the reward for undertaking the investment. The return is the income or the appreciation in the value. In other words, return is the income received on investment. The amount which the invested money will earn is called the investment return. The major factor in the decision to consume now or to invest or consume later can be summarized considering the after tax return relative to the risk over the investment horizon. Investment return is defined as the after tax increase in value of initial investment. The increase in value of assets can come from two sources: a direct cash payment to the investor or an increase in the market value of the investment relative to the original purchase price. The rate of returns is the relative value of benefit on investment.

Shareholders expect two kinds of return from the purchase of common stock in the form of capital gains and dividend. Capital gain may be defined as the profit resulting from the sale of common stock. The shareholders expect an increase in the market value of common stock overtime. Most of mature and stable enterprises declare some portion of earnings as a dividend. Investors also want regular dividend to be declared and paid on common stock. This expectation may take priority over the desire of the company management to retain earnings for the expansion and growth of the company. Moreover, investors seek maximization of dividend as well as stock price. The well being of stockholders can be partially measured by the dividend received, but a more accurate measure is the market value of stock.

Sharpe et al. (2000) expressed that the rate of return or simply return is the rate of change in wealth over a period of time. He suggested calculating returns as follows:

$$\text{Return} = \frac{\text{End of period wealth - Beginning of period wealth}}{\text{Beginning of period wealth}}$$

Moreover, investment decisions are based on expectations about the future. The expected rate of return for any assets is the weighted average rate of return using the probability of each rate of return as the weight. Hence the expected rate of return is calculated by summing the products of the rates of return and their respective probabilities.

$$E(r) = \sum_{t=1}^{n} P_t.r_t$$

Where,

P_t = Probability distribution of rates of returns.
r_t = rate of return.

Van Horne (2000) has proposed the CAPM developed by Markowitz (1959) with regard to the expected rate of return for the individual security linking with the risk coefficients. According to him, the expected return (Rt) for stock t is

$$R_t = R_f + [(R_m - R_f)].B_t$$

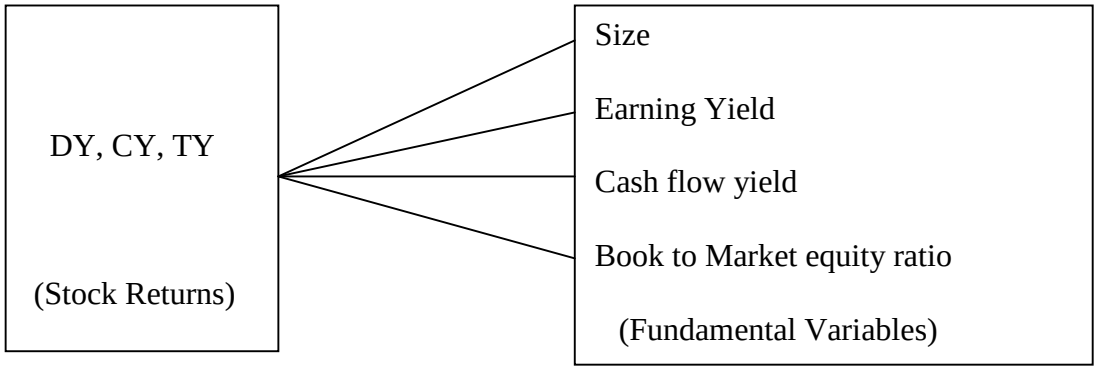
Where,

R_t = Required rate of return on assets t
R_f = Risk free rate of return
R_m = Expected return on market portfolio
B_t = Beta coefficient or systematic risk index of assets t

Thus, stock returns are annual benefits from stock investments. These constitute dividend yield, capital gain yield and total yield. Returns are mainly the results of earnings and cash flows. Besides that, returns are affected by various fundamental variables such as earning yield, size, book to market ratio, cash flow yield. These independent variables are used in an attempt to analyze effect on stock returns. Moreover, these independent variables along with dependent variables constitute a theoretical framework which is depicted below:-

Figure: 2.1

Theoretical framework depicting fundamental variables affecting stock returns



Dependent Variables **Independent Variables**

The word 'Fundamentals' used in this study refers to the group of independent variables such as earning yield, size, book to market ratio and cash flow yield that play important roles in determining the stock returns. As such, earning yield refers to earnings per share divided by market price per share. Size is defined as natural logarithm of total market capitalization of individual enterprises denominated in millions of rupees. Similarly, book to market equity ratio is the ratio of book value of equity per share to market value of equity per share at closing price. Cash flow yield is the ratio of earning per share plus depreciation expenses per share to market price per share. On the other hand, dividend yield is the rate of return in the form of dividend and is computed by dividing the year-end dividend per share by the beginning stock price per share of the year. Capital gain yield means rate of return on investment as a result of change in year-end stock price of two year, and total yield constitutes dividend yield plus capital gain yield. It is the total rate of return on stock investment.

2.2 Review of Empirical Studies

The objective of this section is to explore the empirical studies on effect of fundamental variables on stock returns. The relationship between fundamental variables and stock returns are explained. There is no controversy as to the fact that

stock returns are affected by the financial condition of firm. Theoretically, the performance of companies would depend, among others, upon the liquidity, leverage, profitability, turnover and interest coverage of the firm. Other variables also may explain the performance and stock returns. All these variables and their role in stock returns may be observed from a review of some of the important empirical works undertaken in this section.

2.2.1 Studies on Stock Returns

In this section, studies related to stock returns and its determinants are reviewed. Malkiel (1995) analyzed the returns from investing in equity mutual funds from 1971 to 1991 utilizing a unique data set including return from all mutual funds existing each year. He also evaluated the performance of mutual funds in terms of risk adjusted returns. For this, he used the CAPM model as:

$$R_{fd} - R_f = \alpha + \beta (R_{mkt} - R_f) + E_{fd}$$

Where,
R_{fd}= Funds return
R_{mkt}= Market return
R_f=Risk- free return

α (alpha) is the intercept and β is beta which measures the risk. Positive α implies positive risk adjusted return. His findings among others were:

- In an aggregate, funds had underperformed bench mark portfolios both after management expenses and even gross expenses.
- The average α was negative when net returns were used and positive when gross returns were used, but neither significantly different from zero.
- While considerable performance persistence existed during the 1970's, there was no consistency in fund returns during the 1980's.
- Funds betas and returns were not related as the CAPM suggests.

Another study conducted by Brown and Goetzman (1995) examined the performance of mutual funds in USA in terms of returns, number of mutual funds established and their total capitalization. They compared the returns of mutual funds with the returns of S & P 500. Their findings, among others, were that the mean returns on mutual funds during 1976 to 1988 were 14.50 percent which was higher than that of S & P 500 during same period. They, at the end, concluded that relative risk adjusted performance of mutual funds were persisted.

On the study of earnings and expected returns, Laymont (1988) tried to identify the variables which could predict expected returns as well. For this, he analyzed the relation of dividend yield, earnings yield and dividend payout ratio with returns employing the functional relationship established as follows:

R_{mt}-R_{ft}= *f* (PERLt, d_t-p_t, d_t-e_t, e_t-p_t)

Where,
R_{mt} is quarterly excess return on S & P composite index.
$PERL_t$ is the relative bill rate.
$d_t - p_t$ is the log dividend yield.
$d_t - e_t$ is log dividend payout ratio.
$e_t - p_t$ is the log earning yield.

His study concluded that the aggregate dividend payout ratio had forecasted excess return on both stocks and corporate bonds in postwar US data. High dividends had forecasted high returns. However, high earnings forecasted low returns. Dividend and earnings contributed substantial explanatory power at short horizon.

Kothari and Warner (2001) analyzed the performance of mutual fund in USA in terms of risk adjusted return using the following model:

$R_{pt} - R_{ft} = R_{fd} - R_f = \alpha + \beta (R_{mt} - R_{ft}) + E_{pt}$
Where,
R_{pt} is the mutual fund portfolio return in month t

R_{ft} is the risk free return in month t

R_{mt} is the return on market portfolio on month t

E_{pt} is the white noise error term

α and β are regression's intercept and slope (beta risk) coefficients respectively.

They also used size, book to market and momentum matched return to measure performance. They found more or less results with the results of Malkiel (1995) study.

From the above discussion, it is clear that the stock return is the result of various financial variables. Analysis of stock return is not limited to analyzing the one or two variables rather it constitutes market price per share, earning yield, beta risk and dividend payout ratio. The trend of such variables over the period and comparison of the results with the results of the same variables of another firm or another industry indicates the relative performance of the firm or industry.

2.2.2 Studies on Fundamental Variables

Among the various empirical contradictions, the cross sectional relations between stock returns and fundamental variables has been studied extensively in US, Japan and Korea. In general, a positive relationship has been observed between equity returns and earning yield, cash flow and book to market equity ratio, and negative relationship between equity returns and size. Especially voluminous are the studies that document the size and the earning yield effects and studies that try to disentangle the two effects (for example, Basu (1977, 1983), Banz (1981), Reinganum (1981), Cook and Rozeff (1984), and Wethersfield (1989) and Ritter and Chopra (1989).

Clubb and Naffi (2007) examined the fundamental valuation perspective on stock returns. They suggested that book-to-market equity will be positively related to returns if market value of equity equals future expected cash flows discounted at the expected return and book value proxies for future cash flows. Building on this perspective, they developed a log linear model which includes expectations of future B/M and ROE in addition to current B/M as explanatory variables for future stock returns. These three variables explain a significant part of UK cross-sectional stock returns and they remain

highly statistically significant after including additional risk proxy variables. This supports relevance of fundamental valuation based firm characteristics for explaining stock returns and indicates their potential usefulness for predicting future stock returns.

Wang and Xu (2004) analyzed the determinant of the Chinese stock returns. This study applied the three-factor model to A-shares in the Chinese equity market, one of the fastest growing markets ever. The sample period was July 1996 through June 2002. Size was found to explain the cross-sectional differences in returns; the book-to-market ratio was not helpful. Beta did not account for return differences among individual stocks. Because of the speculative nature of Chinese capital markets, the large proportion of government-owned shares, and the low quality of the companies' accounting information, the free float (that is, the ratio of shares in a public company that are freely available to the investing public to total company shares) was added to the study to serve as a proxy for company fundamentals. The three-factor model that included proxies for size and free float significantly increased the explanatory power of the market model-from 81 percent to 90 percent.

Kayacetin (2003) examined the cross-section of stock return of the Istanbul Stock Exchange. It studied the cross-section of returns on the Istanbul Stock Exchange (ISE) in a multi-factor model framework. He tested the explanatory powers of several company-specific variables, including firm size, book-to-market ratio, sales-to-price ratio, gross profit to price ratio, debt-to-equity ratio, and dividend yield on the ISE securities in the period from July 1993 to November 2002. Sales-to-price ratio and debt-to-equity ratio displayed a higher explanatory power on the cross-sectional variability in returns on the ISE compared to firm size, book-to-market ratio, and gross profit-to-price ratio. However, when debt-to-equity ratio and sales-to-price ratio were included in a single regression equation, the explanatory power of debt-to-equity ratio was also subsumed by the sales-to-price ratio.

Diether, Malloy, and Scherbina (2002) provided evidence that stocks with higher dispersion in analysts' earnings forecasts earn lower future returns than otherwise similar stocks. This effect was most pronounced in small stocks and stocks that have performed poorly over the past year. Interpreting dispersion in analysts' forecasts as a

proxy for differences in opinion about stock, evidence was inconsistent with a view that dispersion in analysts' forecasts proxies for risk.

Chan, Hamao, and Lakonishok (1993) analyzed relationship of stocks returns with earnings yield, size, book-to-market equity ratio and cash flow yield in the context of Japanese stock market over the period 1971-88. They employed the Seemingly Unrelated Regression (SUR) model to adjust simultaneously for portfolio risk and to test for the significance of the fundamental variables. The basic model was,

$$R_{pt} - R_{ft} = a_{ot} + b_{1t}\beta_{p1} + b_{2t}\beta_{p2} + a_{1t}(E/P)_{pt} + a_{2t}(LS)_{pt} + a_{3t}(B/M)_{pt} + a_{4t}(C/P)_{pt} + e_{pt}$$

The dependent variable is the return on portfolio p in month t (R_{pt}) less the risk free rate in month t (R_{ft})

The indexes contained all stocks from both the first and the second sections. The fundamental variables analyzed in each month t included:-

$(E/P)_{pt}$ referred to the average earnings yield for portfolio p
$(LS)_{pt}$ signified average of natural logarithm of market capitalization for firms in portfolio p
$(B/M)_{pt}$ indicated average book to market value for portfolio p
$(C/P)_{pt}$ referred to the average cash flow yield for portfolio p
e_{pt} referred to the random error term for portfolio p

In their study, alternative statistical specifications and various estimation models were applied to a comprehensive, high quality data set that extended from 1971 to 1988. The sample included of 1570 companies from both manufacturing and non manufacturing firm, companies from both sections of the Tokyo Stock Exchange and also de-listed securities. Findings revealed a significant relation between returns in the Japanese market and four fundamental variables-earnings yield, size, book-to-market ratio and cash flow yield. The performance of the book-to-market ratio was especially noteworthy; this variable was statistically and economically the most important of the four variables investigated.

Their findings confirmed existence of size effect, that is, small firm in their sample tended to outperform large firms, after adjusting for market risk and other fundamental variables. If earnings yield was considered in isolation or included with size, indeed had a positive and significant impact on returns. Similarly, on adding book-to-market equity ratio to the mode, the coefficient of earnings yield became insignificantly different from zero. In the context of full model, earnings yield even had a negative impact on stock returns, and were in some case reliably negative. The cash flow yield variable had higher predictive power than the earnings yield did in the light of the distortions in the earnings of Japanese firms included by accelerated depreciation allowances.

Mukherji, Dhatt, and Kim (1997) investigated the relations between stock returns and fundamentals variables in Korea which revealed that annual stock returns during the 1982- 93 period were positively related to book-market, sales-price, debt-equity ratios, and negatively related to firm size but not significantly related to the earnings-price ratio or beta. These results were consistent with the findings of recent studies that value stocks outperform growth stocks over long time in several international markets. Their findings also suggest that book-market and sales-price ratios are more consistent indicators of fundamental value than the earnings-price ratio. Furthermore, the debt-equity ratio was a more reliable proxy for risk than beta. The positive relationship of debt-equity with stock returns persists in portfolios formed on the basis of book-market and sales-price. The negative relationship of firm size with stock returns was also apparent in portfolios formed on the basis of book-market and earnings-price ratio. These findings indicated that greater leverage and smaller size generally result in higher returns for both value and growth stocks.

Kim (1997) re-examined the explanatory power of beta, firm size, book-to-market equity, and the earnings-price ratio for average stock returns. This paper found stronger support for the beta pricing theory than does Kim (1995). After correcting for the EIV bias, he found stronger support for the beta pricing theory than the previous studies or market betas had economically and statistically significant force. Regardless of the presence of the firm size, book-to-market equity, and earnings-price ratios, betas have significant explanatory power for average stock returns. In particular, firm size

was barely significant using monthly returns, but no longer significant using quarterly returns. However, book-to-market equity still had significant explanatory power for average stock returns.

Jagannathan and Wang (1996) assumed that the CAPM holds in a conditional sense, (i.e., betas and the market risk premium vary over time). By assuming that the CAPM holds period by period, concluded that the size effect become much weaker in predicting expected returns. They found that the conditional version of the CAPM explained the cross-section of stock returns rather well. In doing so, they implicitly assumed that the portfolios of stocks used in the study were economically important. For this study they evaluated three betas where as the standard CAPM has only one beta.

Kothari, Shanken, and Sloan (1995) analyzed the Cross-section of Expected Stock Returns. It reveals economically and statistically significant compensation for beta risk when betas are estimated from time-series regressions of annual portfolio returns on the annual return on the equally weighted market index. The relation between book-to-market equity and returns was weaker and less consistent than that in Fama and French (1992). They conjectured that past book-to-market results using COMPUSTAT data were affected by a selection bias and provide indirect evidence.

Fama and French (1995) studied whether the behavior of the stock prices, in relation to size and book-to-market-equity (B/M), reflects the behavior of earnings. Consistent with rational pricing, high B/M signals persistent poor earnings and low B/M signals strong earnings. Moreover, stock prices forecast the reversion of earnings growth observed after firms are ranked on size and B/M. Finally, there were market, size, and B/M factors in earnings like those in returns. The market and size factors in earnings help explain those in returns, but they found no link between B/M factors in earnings and returns.

Fama and French (1992) conducted the study on cross-section of expected stock returns. They identified the relationship of average returns with market beta and size. They also examined the role of earning price ratio, leverage, and the book to market equity in average returns. Their goal was to evaluate the joint role of market beta (ß),

size, E/P, leverage, and book to market equity in the cross-section of average returns on NYSE, AMEX, and NASDAQ stocks. They used the monthly data for the period July 1941 to December 1990.

They found that the relation between market beta (ß) and average return disappeared during the more recent 1963-1990 period, even when ß where, is used alone to explain average returns. The appendix showed that the simple relation between ß and average return was also weak in the 1941-1990 periods. In short, their tests did not support the most basic prediction of the SLB model, that average stock returns are positively related to market ßs. Their results on the absence of relation between ßs and average stock returns for 1963-1990 were so contrary to the tests of the Sharpe-Lintner-Black model by Black, Jensen, and Scholes (1972), Fama and MacBeth (1993), and Cahn and Chen (1988). Unlike the simple relation between ßs and average return, the univariate relations between average return and size, leverage, E/P, and book-to-market equity were strong. In multivariate tests, the negative relation between size and average return was robust to the inclusion of other variables. The positive relation between book-to-market equity and average return also persists in competition with other variables. Moreover, although the size effect has attracted more attention, book-to-market equity had a consistently stronger role in average returns.

In a nutshell, market ßs seems to have no role in explaining the average returns on NYSE, AMEX, and NASDAQ stocks for 1963-1990, while size and book-to-market equity capture the cross-sectional variation in average stock returns that is related to leverage; book to market ratio can mathematically be obtained from these two types of leverage measures namely book leverage and market leverage.

Davis (1994) conducted the study on The Cross- Section of Realized Stock Returns; The Pre- COMPUSTAT Evidence. The sample period had been covered from July 1940 to June 1963. The data for the study were taken from two primary sources. Book value, earnings, cash flow, and sales figures were collected from the Moody's Industrial Manuals. Stock returns, stock prices and market values of equity were collected from the University of Chicago's Center for Research in Security Prices (CRP) monthly file on New York Stock Exchange (NYSE) and American Stock Exchange (AMEX). Then, he analyzed the ability of fundamental variables (i.e. book

to market equity ratio, earnings yield, cash flow yield, and historical sales growth) to explain the cross section of realized stock returns. The results of his study indicated that book to market equity, earning yield, and cash flow yield had positive impact and significant explanatory power with respect to the cross-section of realized stock returns during the period from July 1940 through June 1963, whereas size and historical sales growth rate had negative impact on stock returns.

Hirschey and Spencer (1992) found cash flow, growth, risk (beta), research and development and advertising expenditures were all key fundamental factors that help determine the earnings prospects of individual companies. This note demonstrates how the market valuation of these fundamental factors varies over firm size classes during the different economic conditions and market environments of the 16 year period 1975-90.

Similarly, Banz (1981) also tried to show the relationship between return and market value of common stock. His finding was market equity (i.e. size) had most significant negative relationship with returns. Basu (1983) also tried to show the relationship between earnings yield of market value, and return for NYSE common stock. His finding was earnings price ratios (E/P) helped to explain the cross section of average returns. E/P had most significant positive relation with average returns.

Two main conclusions seem relevant. First the effects of market value on fundamental factors are surprisingly consistent over an extended period of widely varying interest rates and general economic conditions. Second the influences of fundamental factors appear to be affected by firm size. More specifically, cash flow is important in each period and each size class, but it is most important for relatively large firms; growth has a uniformly positive market value influence on small, medium and large firms; the link between fundamental beta and market value is strong for small firms but not for medium and large firms, suggesting that returns to investing in small firms may indeed be affected by idiosyncratic risks; research and development (R&D) has a dramatic effect on market values of all size classes, but its strength is inversely related to firm size; advertising expenditures have a durable effect on market value only in the case of large firms.

A study by Goetzmann and Jorin (1993) examined the ability of dividend yields to predict long horizon stock returns. The result of study revealed that there were no strong statistical evidences indicating that dividend yields could be used to forecast stock returns.

Most of the above mentioned empirical studies are devoted to analyzing the cause and effect of fundamental variables on stock returns using cross section and time series data from different countries. The findings generally revealed the positive relationship of stock returns with earnings yield, cash flow yield, profitability, leverage and book to market value, and negative relationship with size (i.e. market capitalization). Furthermore, it is important to be noted that the CAPM has been victimized by these studies as evidence of beta has not strong explanatory power as compared to book to market value and size.

2.2.3 Review of Major Studies in Nepal

Singh (2009) conducted a study on A Fundamental Analysis of Stock Returns in Nepal. She had performed the study at a portfolio level based on pooled cross-sectional data analysis of 38 enterprises whose stocks are listed in Nepal Stock Exchange Limited and traded in stock market for the period of 1997/98 to 2007/08. The major findings of her study are:-

- Dividend yield has positive relationship with earnings yield and cash flow yield whereas negative relationship with book to market ratio and size. Of all the four variables considered, earnings yield has been found to have strong explanatory power in predicting the dividend yield than other variables.

- Capital gain yield has been observed to have positive relationship with earnings yield and size whereas negative relationship with book to market value of equity ratio and cash flow yield.

- Total yield is positively related to earnings yield and size whereas negatively related to book to market equity ratio and cash flow yield. Of all the four

variables considered, the statistical evidences provide robust results of size. In contrast, book to market value equity ratio variable has not significant impact on total yield. Firm's book to market ratio may not play important role in predicting total yield as compared to other variables.

Adhikari (2007) investigated the effect of yields, earnings to price and dividends on financial performance of Nepalese companies. It observed that higher earnings yield had higher returns. The negative book to market return relationship and positive dividend payout/returns relationship observed in the study contradict with the empirical findings in the context of big and developed stock market. Similarly, the positive earnings yield/return relationship and the negative market size/return relationship observed in the study. It is determined that both positive and negative relationship exist between returns (i.e. dividend yield, capital gain yield and total yield) with the fundamental variables (i.e. earning yield, cash flow yield, book to market equity ratio and dividend payouts) in the context of Nepalese enterprises.

In Nepalese context, Pradhan (2004) in his study addressed fundamentals of stock returns in the context of Nepal. The study was based on pooled cross sectional data of 40 enterprises whose stocks were listed in NEPSE Limited and traded in the stock market. He examined the relationship of stock returns (R) such as, dividend yield, capital gain yield and total yield with fundamental variables such as, earnings yield (E/P), size (LS), book to market equity ratio (B/M) and cash flow yield (C/P) of Nepalese enterprises by estimating various models. The theoretical statement of models was:

$R = f\,(E/P, LS, B/M, C/P)$

The estimated equation was:

$$R = a + b_1\,(E/P) + b_2\,(LS) + b_3\,(B/M) + b_4(C/P) + U_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (II)$$

Where, dependent variable, R chosen for the study has been specified as under:

• DY = Dividend yield or dividend per share to market price per share, i.e., D_1/P_0.

• CY = Capital gain yield or capital gain per share to market price per share, i.e.,$(P_1-P_0)/P_0$.

• TY = Total yield or dividend per share plus capital gain per share to market price per share, i.e., $(D_1+P_1-P_0)/P_0$.

The independent variables are specified as under:

• E/P = Earnings yield or earning per share to market price per share.

• LS = Size or natural logarithm of market capitalization.

• B/M = Book value of equity per share to market value of equity per share.

•C/P = Cash flow yield or earning per share plus depreciation expenses per share to market price per share.

• U_i= Disturbance or error term.

Some major findings revealed in the study were as follows:

- Earnings yield and cash flow yield had significant positive impact on dividend yield and an insignificant impact on book to market value.

- The size had a negative impact on dividend yield. In case of earning yield and cash flow yield, cash flow yield had been found to be more informative than earning yield.

- Stock with higher capital gain yield had higher earnings yield.

- Larger stocks had higher capital gain yield.

- Capital gain yield was positively influenced by earnings yield and size whereas the same is negatively influenced by book to market value and cash flow yield, book to market value had been found to be statistically strong in predicting capital gain yield.

- Total yield was negatively determined by book to market equity ratio and cash flow yield whereas positively determined by earnings yield and size. Among all the variables, book to market equity ratio had the most predictive power in predicting total yield.

- Similarly, the study also revealed positive relationship among earnings yield, book to market equity ratio and cash flow yield. However, the size was negatively related to these three variables.

Another research conducted by Pradhan (1993) about Stock Market Behavior in Small Capital Market, identified the relationship of liquidity (LEV), earnings (EARN), turnover (TURN) and coverage (COV) with market equity (ME), market value of equity to its book value (MV/BV), price earnings ratio (PE), dividend per share to market price per share (DPS/MPS). For this, he collected data from 17 companies from 1986 to 1990 and employed the following model based on pooled cross- section analysis of 55 observations:

$V=b_0+b_2+LIQ+ b_2EV+ b_3EARN+ b_4TURN+ b_5COV+V_i$

Where,s
The dependent variables, V chosen for the study were ME, MV/BV, P/E, DPS/MPS and DPS/EPS.
Some findings, among others, of the study were as follows:

- Larger stocks have larger earnings ratio, smaller dividends and lower profitability.

- Stock with larger market value to book value of equity have lower dividends, lower profitability

- Stocks with larger price earnings ratios have profitability, and small dividend ratios.

- Stocks paying higher dividends have higher liquidity, lower leverage, higher earnings, higher turnover and higher interest coverage. However, liquidity and leverage ratios are more variable for the stocks paying lower dividends while earnings, assets turnover and interest coverage are more variable for the stocks paying higher dividends.

Manadhar (1998) analyzed the impact of dividend per share, earning per share, price earnings ratio on equity, and dividend yield on market capitalization. Multiple regressions were employed to test and analyze the cause and effect relationship between dependent and independent variables. Mathematically, multiple regression equation employed in the study was as follows:

$Y=f(X_1, X_2, X_3, X_4, X_5)$

Where,

Y = Market Capitalization
X_1 represents DPS=Equity dividend divided by the number of equity shares.
X_2 represents EPS=Net income divided by the number of equity shares.
X_3 represents P/E=Closing price divided by EPS.
X_4 represents ROE=EPS divided by paid up price multiplied by 100.
X_5 represents D/P=DPS divided by closing market price per share.

The major findings of his study were as follows:

- DPS, ROE, and D/P have the significant impact whereas ROE and P/E have no significant impact on market value.
- DPS and ROE are positively related to market capitalization but EPS, P/E and D/P are negatively related with market capitalization.

Balampaki (2003) examined the fundamentals of stock returns in Nepal. The study had been conducted at a portfolio level based on pooled cross-sectional data analysis of 40

enterprises for the period of (1995-2000). Results revealed that positive relationship of dividend yield with earnings, book to market ratio and cash flow yield whereas negative relationship with size. Cash flow yield had been found strong explanatory power in predicting the dividend yield. Moreover, there was positive relationship of capital gain yield with earning yield whereas negative relationship with book to market value of equity. Total yield was positively related to earnings yield and size whereas negatively related to book to market equity ratio and cash flow yield.

Neupane (2007) conducted a study on determination of stock price in Nepal Stock Exchange. It was assumed that market price of share was influenced by the changes in Earnings per share, Dividend per share and Book Price per share to determine the magnitude of the independent variables on the dependent variable. Simple and multiple regression analysis were made and magnitude was identified after determining the regression equation and his findings were as follows:-

- In NEPSE, there were controversial results that the share price in NEPSE was not significantly affected by the dividend, book value and earnings per share. There might be other factor that played significant role to determine the stock price in Nepal.

- The MPS has not been significantly affected by interest rate, retention rate, stock dividend, cost of equity, tax rate, value of US dollar and gold price, global economy, market liquidity, season, day of the week, size and change in management whereas as these factors have simple effects in stock pricing.

Upadhayay (2007) examined determination of stock price in Nepal Stock Exchange. The main purpose of this study was to identify the factors responsible for determining stock price and their relationship with stock price. The findings of his study were as follows:-

- Adequate knowledge and information regarding the capital market was lacking in Nepalese investors. This is precisely the reason why they were cheated by the concerned companies and the NEPSE showed rather irrational behavior.

- Secondary data analysis revealed that price behaviors differs company to company even though DPS, EPS and BVPS jointly have significant effect on the share price, individually they did not have consistent relationship with MPS. It means that there may be other major factors influencing and determining the share price significantly.

- Primary data summarized that company performance (EPS, Book Value, DPS, risks), information disclosed, timely AGM, political instability, national economy, peace, strikes, demand and supply situation of the share , cease fire etc. were some factors having significant influence on share price. Similarly, other relevant factors, interest rate, tax rate, seasonal factors, day of week effects, gold price, global economy, values of US dollar, cost of equity, market liquidity, size of the firm and change in management have not seen significant effect.

2.3 Research Gap Analysis

Although some very valuable researches devoted to analyzing the cause and effect of fundamental variables on stock returns using cross- section and time series data from different countries have been done so far, there are still a lot of avenues available for the researchers in this area to explore and identify new facts and figures in the volatile and developing capital market like ours. Till the date, following things in the area are explored and identified by the researchers on the basis of easily available research reports:

- Stock returns are influence by different fundamental variables.

- The fundamental variables constitute earnings yield, size, book to market value of equity and cash flow yield, and various measures of liquidity, leverage, profitability, assets turnover, interest coverage and other ratios.

- Positive relationship of stock returns with earnings yield, cash flow yield, and book to market value, profitability and leverage and negative relationship with size.

- Stock returns behavior in relation to some listed firms with five years data up to FY 2006/07.

- Many other related and unrelated research reports in this regard.

But consulting the literatures available in the T.U library, SEBON library, NEPSE library, Nepal Commerce Campus library, Global College library and many internet sites, it was found that there are still many spectrums of the underlying topic to be dealt in the field of investors' interest. For example, type of stock market prevailing in Nepal in terms of stock returns and volatility ; correlation analysis among earnings yield, cash flow yield, book to market value, size, dividend yield, capital gain yield and total yield ; survey of financial executives with regard to impact of fundamental variables on stock returns etc. Because of that the present research work is in the same field and relates to the topic but with an intensive coverage in terms of number of firms, period covered and observations.

CHAPTER III

RESEARCH METHODOLOGY

Research is a systematic and organized effort to investigate a specific problem that needs solution. Methodology refers to various steps that are generally adopted by a researcher in studying the research problem along with the logic behind it. Thus, research methodology is a way to systematically solve the research problem. In other words, research methodology refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives. So, it is the method, step, and guideline which are to be followed in analysis and a way of presenting the collected data for meaningful analysis.

The main purpose of this chapter is to focus on different research methods and conditions which are used while conducting this study. This chapter has been divided into five sections. Section one represent the research design, while section two describes the nature and sources of data, section three represent selection of enterprises, section four explains method of analysis and finally section five includes definition of key terminologies.

3.1 Research Design

Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research question and to control variance. It provides the general framework for collecting, analyzing and evaluating data after identifying what the researcher wants to know, and what has to be dealt with in order to obtain required information. The research design is an integrated system that guides the researcher in formulating, implementing and controlling the study.

In order to conduct this study, descriptive and analytical research design has been adopted. Descriptive research design has been utilized mainly for conceptualization of the problem. More specifically, descriptive research is a fact finding operation that describes the existing phenomena. It simply portrays an accurate profile of

organizations, events or situation. Analytical research design has been followed mainly to analyze the relationship between stock returns and different fundamental variables. Correlation research design is a part of analytical research design. It is used to ascertain the extent to which two variable are related. The researcher's main interest is to determine whether two or more variable co-vary, and if so, to establish the direction, magnitude and form of observed relationships. Variables, thus, may be closely related, moderately related or completely unrelated. Thus, there are three types of correlations:

- Positive correlation exists when an increase in one variable is accompanied by an increase in another. For example, increase in earnings yield increases dividend yield.

- Negative correlation exists when two variables are inversely related. An increase in one variable would result in a decrease in another. For example, an increase in size of the organization could result in decrease in returns.

- No correlation exists when no discriminable correspondence prevails between high and low ranks

Correlation range over a scale, which extend from a perfect negative (-1.0) correlation to no correlation (0.0) to a perfect positive correlation (+1.0). The correlation technique is thus a valuable research tool.

3.2. Nature and Sources of Data

This study is primarily based on secondary sources of data. The required data has been collected from financial statements of listed companies which has been located at the official website of Nepal Stock Exchange Limited (www.nepalstock.com), concerned institutions and annual reports of SEBO/N downloaded from the website-www.sebonp.com.

Different books from library, periodicals, newspapers, magazines, research articles/journals, research studies and thesis works have also been used whenever required. Needless to say that this study is associated with the past phenomena,

therefore secondary data has been extensively used to carry out the whole calculations. Thus, the historical data from the NEPSE's, SEBO/N's and concerned companies websites is used which obviously is the secondary source and past phenomena in nature. Structured questionnaire which is the primary method of data collection has also been used to verify the reliability and validity of secondary data results. The survey of financial executives and experts is based on structured questionnaire in the selected sectors.

3.3. Selection of Enterprises/Firms

There were 176 Nepalese enterprises listed in the Nepal Stock Exchange Limited (NEPSE) by the end of fiscal year 2009/10, which is regarded as size of the population for the study. To analyze the relationships among different variables, study uses pooled cross-section of 30 enterprises from 6 sectors: Commercial Banks, Development Banks, Finance Companies, Insurance Companies, hotels, manufacturing and processing companies and 10, 3, 8, 5, 2 and 2 respectively from each group are selected as a sample.

Table 3.1

Sector- Wise Selection of Sample from the Total Listed Companies in NEPSE

S. No.	Sectors	No. of sample (n)	No. of listed companies (N)	Sample Percentage
1	Commercial Banks	10	23	43.48%
2	Development Banks	3	40	7.5 %
3	Finance Companies	8	62	12.90 %
4	Insurance Companies	5	19	26.32%
5	Mfg. and Processing Companies	2	18	11.11%
6	Trading Company	-	4	-
7	Hotel	2	4	50%
8	Other Company	-	6	-
	Total	**30**	**176**	**17.05%**

Source: Annual Report (2009/2010), SEBO/N

The list of selected companies and their periods of used data to conduct this study are shown in the table 3.2 as below

Table 3.2

Selection of Companies, Period of Study and Number of Observations

S.No.	Name of the Companies	Year	Observations
	A. Commercial Banks		
1	NABIL Bank Ltd.	2005/06 to 2009/2010	5
2	Nepal Investment Bank Ltd.	2005/06 to 2009/2010	5
3	Standard Chartered Bank Nepal Ltd.	2005/06 to 2009/2010	5
4	Himalayan Bank Ltd.	2005/06 to 2009/2010	5
5	Everest Bank Ltd.	2005/06 to 2009/2010	5
6	Bank of Kathmandu Ltd.	2005/06 to 2009/2010	5
7	Machhapuchhre Bank Ltd.	2005/06 to 2009/2010	5
8	Laxmi Bank Ltd.	2005/06 to 2009/2010	5
9	Kumari Bank Ltd.	2005/06 to 2009/2010	5
10	Siddhartha Bank Ltd.	2005/06 to 2009/2010	5
	B.Development Banks		
11	Siddhartha Development Bank Ltd.	2005/06 to 2009/2010	5
12	Ace Development Bank Ltd.	2005/06 to 2009/2010	5
13	Sanima Bikash Bank Ltd.	2006/07 to 2009/2010	4
	C.Finance Companies		
14	Prabhu Finance Co. Ltd.	2008/09 to 2009/2010	2
15	Navadurga Finance Ltd.	2005/06 to 2008/2009	4
16	Kuber MerchantFinance Ltd.	2007/08 to 2009/2010	3
17	Standard Finance Ltd.	2005/06 to 2009/2010	5
18	ICFC Finance Ltd.	2007/08 to 2009/2010	3
19	IME Financial Institution Ltd.	2005/06 to 2008/2009	4
20	Annapurna Finance Ltd.	2005/06 to 2009/2010	5
21	Pokhara Finance Limited	2005/06 to 2009/2010	5
	D.Mfg. and Processing Companies		
22	Unilever Nepal Ltd.	2005/06 to 2005/2006	1
23	Bottlers Nepal(Balaju) Ltd.	2005/06 to 2005/2006	1
	E.Hotels		
24	Taragoan Hotel Ltd.	2005/06 to 2005/2006	1
25	Oriental Hotel Ltd.	2005/06 to 2005/2006	1
	F.Insurance Companies		
26	Everest Insurance Co. Ltd.	2005/06 to 2009/2010	5
27	Nepal Life Insurance Co. Ltd.	2005/06 to 2008/2009	4
28	Sagarmatha Insurance Co. Ltd.	2005/09 to 2009/2010	5
29	Premier Insurance Co. (Nepal) Ltd.	2005/06 to 2008/2009	4
30	Alliance Insurance Co. (Nepal) Ltd.	2005/06 to 2009/2010	5
	Total Observations		**122**

Source: Webpage of SEBO/N .:http://www.sebonp.com (Annual Report 2009/10)

Thus, this study uses maximum of 122 observations for the analysis of different variables with the help of pooled cross-sectional data of 30 enterprises for the period of 2005/06 to 2009/10. The enterprises selected for the study can be considered representative of banks, finance companies and insurance companies, hotels, manufacturing and processing companies.

3.4 Method of Analysis

Analysis is the careful study of available facts so that one can understand and draw conclusion from them on the basis of established principles and sound logic. The statistical techniques of regression analysis, both simple and multiple, linear and non-linear has been employed to a number of cases. Various statistical tools are used to confirm the relationship between stocks returns and fundamental variables and to test the robustness of the results. The empirical results have been extracted in this study by using annual data of listed companies from 2005/2006 to 2009/2010. The specific methods of analysis that have been used in this study are mentioned below:-

a) Econometric Model

The study, among others, attempts to estimate various econometric models to confirm the relationship between stock returns and fundamental variables and to test the robustness of the results. The alternative statistical specifications are also attempted in each case where necessary in order to obtain the best possible results. The study examines the relationship of stock returns (R) such as, dividend yield, capital gain yield and total yield with fundamental variables such as, earnings yield (E/P), size (LS), book to market equity ratio (B/M) and cash flow yield (C/P) of Nepalese enterprises by estimating various models. The theoretical statement of the models is that the stock returns (R) may be regarded as subject to the constraints of earnings yield (E/P), size (LS), book to market equity ratio (B/M) and cash flow yield (C/P). The theoretical statement may be framed as under:

$$R = f(E/P, LS, B/M, C/P) \quad \text{(I)}$$

The equation to be estimated has, therefore, been specified as under:

$R = a + b_1 (E/P) + b_2 (LS) + b_3 (B/M) + b_4(C/P) + U_i$……(II)

Where,

Dependent variable, R chosen for the study has been specified as under:

• DY = Dividend yield or dividend per share to market price per share, i.e., D_1/P_0.

• CY = Capital gain yield or capital gain per share to market price per share, i.e., $(P_1-P_0) / P_0$.

• TY = Total yield or dividend per share plus capital gain per share to market price per share, i.e., $(D_1+P_1-P_0) /P_0$.

The independent variables are specified as under:

• E/P = Earnings yield or earning per share to market price per share.
• LS = Size or natural logarithm of market capitalization.
• B/M = Book value of equity per share to market value of equity per share.
• C/P = Cash flow yield or earning per share plus depreciation expenses per share to market price per share.
• U_i= Disturbance or error term.

(b) Process of Sorting Ratios of Fundamental Variables and Stock Returns

In this study, the ratios of fundamental variables and stock returns are sorted into four portfolios on the basis of increasing value of ratios of fundamental variables such as earnings yield, book to market equity ratio, size and cash flow yield.

In the first step, stocks are ranked by E/P ratio in the table 4.1 and placed them into four portfolios. Portfolio 1 contains stocks with value of less than 3 percent. Accordingly, Portfolio 2, Portfolio 3 and Portfolio 4 contain stocks ranked by increasing value of E/P,i.e.3% to 6%, 6.01% to 12% and greater than 12% respectively. For example, if E/P = 5.77 for the year 2005/06 of the sampled firm, say NABIL, then the value E/P = 5.77 is placed in the Portfolio 2 being in the range 3% to 6%. Then, the respective values of all other financial variables (B/M, LS, C/P, DY, CY and TY) which corresponds to E/P = 5.77 is placed along the portfolio 2 in other

sorting tables, i.e. B/M = 0.17 is placed in the table with base as book to market equity value along the portfolio 2 ; LS = 9.31 is placed in the table with base as LS along the portfolio 2 and so on for other tables with bases as C/P, DY, CY and TY. After classifying all the financial variables in the same process, total observations (N), mean and standard deviation are computed for all the four portfolios.

Due to the incompatibility of adequate space and practical difficulty to present the whole process of sorting ratios of all fundamental variables and stock returns, the method of sorting has been evidenced on the basis of one of the four fundamental variables, i.e. Earning yield (E/P) and with the help of required information from the period 2005/06 to 2009/10 of the first sampled firm (NABIL) and the last sampled firm (AICNL) in the Appendix II

(c) Method of Analyzing the Summary Statistics for Portfolio Sorted by Fundamental Variables

The summary statistics are studied to examine the relationship between stock returns (i.e. dividend yield, capital gain yield and total yield) and fundamental variables (i.e. size, book to market equity ratio, earning to price and cash flow yield) of Nepalese enterprises. The study is conducted at a portfolio level based on pooled cross-section analysis of 30 enterprises with 122 observations. The study sorts out all the sampled securities into four portfolios. The summary statistics for portfolios have been sorted by earnings yield, size, book to market equity ratio and cash flow yield, viz., Panel A, Panel B, Panel C and Panel D respectively. The low to high ratios of fundamental variables are provided in portfolios 1 to 4 for each panel. Forming more than four portfolios based on various ratios of fundamental variables would yield too few stocks per portfolio. In other words, splitting stocks into more than four portfolios reduces the sample sizes which would result the greater sampling error. For each portfolio, total observations (N), average/mean ratios and their respective standard deviation are computed which are then placed in the table no.4.1 summarizing statistics of portfolios sorted by E/P ratio for necessary analysis. In other table numbers 4.2, 4.3 and 4.4 also, summary statistics of portfolio are sorted by size, B/M ratio and C/P ratio in the same manner like in the table 4.1

(d) Statistical Tools

In the process of estimating above mentioned models in subsection (a), various statistical tools like coefficient of multiple determination (R^2), Standard error of estimate (SEE), Student's t-statistics and F-statistics etc are employed in this study. The statistical parameters are calculated with the help of computer via SPSS for the models prescribed above. Brief explanations of statistical tools employed in this study are as follows:

(i) Coefficient of Multiple Determinations (R^2)

It is the measure of the degree (extent or strength) of linear association of correlation between two variables, one of which happens to be independent and other being dependent variables. Moreover, it is the numerical expression of relationship between variables in terms of percentage. It measures the percentage of total variation in dependent variables explained by independent variables. The value of the coefficient of multiple determinations can range from zero to one (i.e. $0 \geq R^2 \leq 1$). If R^2 is equal to 0.95, it indicates that independent variables used in regression model explain 95 percent of the total variation in the dependent variable. Moreover, higher R^2 explains higher relationship between variables and vice-versa. For example, value of $R^2=1$ indicates that there is perfect relationship between variables and changes on dependent variable (Y) is only due to change in independent variable (x) and there would be no other intervention. A value of one can occur only if the unexplained variation is zero, which simply means that all the data points out in the scatter diagram fall exactly on the regression line. It is calculated as:

$$\text{Coefficient of Determination } (R^2) = \frac{\text{Explained Variance}}{\text{Total Variance}}$$

(ii) T-Statistics

It is used to test the validity of assumption if the sample size is less than 30. The computed value of 't' is compared with the table value of 't' at certain level of

significance for given degree of freedom. If the calculated value of 't' is greater than its table (critical) value, the difference is treated as significant at the level but if the calculated 't' value is less than its table value, we infer the difference is not significant.

(iii) Regression Constant (a)

It is also known that the numerical constant which determines the distance of the fitted line directly above or below the origin (i.e. Y- intercept). The value of the constant, which is intercept of the model, indicates the average level of dependent variable when independent variables are zero. In other words, it is better to understand that 'a' (constant) indicates the mean or average effect on dependent variable if the entire variable is omitted from the model.

(iv) Regression Coefficient (b_1, b_2, b_3….)

The regression coefficient of each independent variable indicates the marginal relationship between that variables and value of dependent variable, holding constant effect of all other independent variables in the regression model. In other words, the coefficients describe how changes in independent variables affect the values of dependent variable's estimate. The numerical constant is also known which determines the change in dependent variable per unit change in independent variables (i.e. slope of line). More specifically, it represents increment in the value of dependent variable (Y) corresponding to a unit change in the value of independent variable (x).

(v) Standard Error of Estimate (SEE)

With the help of regression equations, perfect prediction is practically impossible. Standard error of an estimate is a measure of reliability of the estimating equations, indicating the variability of the observed points around of regression line, i.e. the extent to which observed values differ from their predicted values on the regression line. For example, if SEE=3.97%, it indicates that the regression estimation of Y=a+b.x has error by 3.97%. Hence, the smaller the value of SEE, the closer will be the dots to the regression line and better the estimates based on the equation for this line. If SEE is zero, then there is no variation about the line and the correlation will be

perfect. Thus, with the help of SEE, it is possible to ascertain how good and representative the regression line is as a description of the average relationship between two series.

(vi) F-test

The Fisher's F-distribution is defined as a distribution of the ratio of two independent chi-square variables each divided by the corresponding degree of freedom. It is clear that F-distribution has a single mode. The shape of F-distribution depends on the value of degree of freedom and the value of F lies between 0 to ∞ (zero to infinity). The F-test sometimes called variance ratio test is based on F-distribution. In order to test goodness of fit of the regression models, F-test is used.

3.5 Definition of Key Terminologies

The financial statements published by NEPSE Ltd. and SEBON have its own format for publishing financial data of Nepalese Enterprises on a more or less uniform basis. It is, therefore, desirable to define some key terms so as to avoid mis-understanding.

Fundamentals: The word 'Fundamentals' used in this study refers to the group of independent variables that play important roles in determining the stock returns.

Stock Returns: Stock returns, in this study are defined in terms of dividend yield, capital gain yield and total yield.

Dividend Yield: Dividend Yield is a percentage of dividends per share on market price per share .It measures dividend in relation to market value of share. So, dividend yield is the dividend received by the investors as a percentage of market prices per share in the stock market. It is the rate of return in the form of dividend and is computed by dividing the year-end dividend per share by the beginning stock price per share of the year.

Capital Gain Yield: Capital gain yield means rate of return on investment as a result of change in year-end stock price of two year. Positive value of capital gain yield shows positive rate of return whereas negative value of capital gain yield shows negative rate of return or capital loss.

Total Yield: It constitutes dividend yield plus capital gain yield. It is the total rate of return on stock investment

Earning Yield: It refers to earnings per share divided by market price per share.

Cash Flow Yield (C/P): It is the ratio of earning per share plus depreciation expenses per share to market price per share. Alternatively, it is also obtained as the ratio of cash flow per share and market price per share. Similarly, cash flow yield is also given by the division of overall cash flow by market capitalization.

Market Size: It is defined as natural logarithm of total market capitalization of individual enterprises denominated in millions of rupees. Total market capitalization includes net worth plus long term debt. Alternatively, total market capitalization is also obtained as the product of market price per share and number of shares outstanding. Market size is denoted in this study by [Log (ME)].

Book- to-Market Equity Ratio (B/M): It is book value of equity per share to market value of equity per share at closing price.

Cross –Section: It is situational analysis. The word cross-section used in this study refers to a study across different stocks for one time period by taking representative sample.

Market Price Per Share (MPS): It is the price at which shares are traded in stock market. This study has used year end market price per share of each company over the study period which is determined in the Nepal Stock Exchange Limited.

Book Net Worth Per Share (BNWPS): Book Net worth is the owners' equity in the company. It is also known as book value of the company. It consists of equity capital,

retained earnings, reserves and surplus. It is calculated dividing Book Value of Net Worth by total numbers of shares outstanding. Net worth per share is the book value of each share.

Earnings Per Share (EPS): Earning per share refers the rupee amount earned per share of common stock outstanding. It measures the profitableness of the shareholders investment. It is the amount which is calculated by dividing the total earnings available to common stocks holders by the total number of shares outstanding.

Dividend Per Share (DPS): Dividend per share indicates the rupee earnings distributed to common stockholders per share held by them. It is the amount available to holders of each stock. It is the regular returns to investors on their investment provided by the company. It is calculated by dividing total dividend amount by the number of shares outstanding.

CHAPTER-IV
PRESENTATION AND ANALYSIS OF DATA

This chapter is fully devoted to analyzing the various issues of stock returns and fundamental variables. The analysis of summary statistics for portfolios sorted by fundamental variables has been described in section 1 under Panel A, Panel B, Panel C and Panel D categories while section 2 analyzes the properties of portfolios formed on dividend yield, capital gain yield, and total yield of selected Nepalese enterprises listed in Nepal Stock Exchange Limited. The purpose of this chapter is to carry out secondary as well as primary data analysis to find out the relationship between fundamental variables and stock returns and impact of fundamental variables with respect to stock returns.

4.1 Analysis of Secondary Data

In this section, summary statistics for portfolios are used to examine the overall relationships of dividend yield, capital gain yield and total yield with fundamental variables such as earnings yield, size, book to market ratio and cash flow yield. Besides this, summary statistics for portfolios sorted by four fundamental variables have been studied to determine the relationships among fundamental variables themselves. Here, we sorts out all the securities into four portfolios. For each portfolio, various ratios of dividend yield, capital gain yield, total yield, earnings yield, size, book to market value ratio and cash flow yield are computed. They are then sorted out by earnings yield, size, book to market equity ratio and cash flow to price ratio on the basis of low to high ratios of these underlying fundamental variables which are then shown in Table 4.1, 4.2, 4.3 and 4.4 respectively under Panel A, Panel B, Panel C and Panel D respectively. Finally, average ratios and standard deviation for each of the four portfolios under each Panel are computed for subsequent analysis.

4.1.1Summary Statistics for Portfolios Sorted by Fundamental Variables

In this segment, average yearly dividend yield (DY), capital gain yield (CY), total yield (TY), earnings to price (E/P) ratio, size (natural logarithm of market

capitalization), book to market (B/M) ratio, and cash flow to price (C/P, i.e., earnings plus depreciation divided by price) ratios, for portfolios sorted by the four fundamental variables over the period of 2005/06 to 2009/10 of 30 enterprises with 122 observations are presented and analyzed in four different sorting panels/tables. Moreover, figures in parentheses are standard deviations and N denotes the number of observations in each portfolio.

PANEL: A

In this panel, summary statistics of portfolios sorted by Earnings to Price (E/P) ratio is tabulated and analyzed as follows:

Table 4.1

Summary Statistics of Portfolio Sorted by Earnings to Price (E/P) Ratio

Portfolios/Bases of Portfolio	1 (Low) <3.00	2 3.00 to 6.00	3 6.01 to 12.00	4 (High) >12.00
Dividend yield (percent)	1.25	2.5	5.05	14.22
	(1.45)	(2.44)	(3.82)	(9.15)
Capital gain yield (percent)	5.94	21.25	15.54	29.84
	(39.25)	(44.95)	(35.17)	(49.61)
Total yield (percent)	2.90	33.70	28.31	40.65
	(34.40)	(60.04)	(44.30)	(48.61)
E/P (percent)	-8.42	6.81	14.15	29.88
	(24.56)	(1.84)	(2.26)	(11.22)
B/M (times)	0.46	0.54	0.87	1.29
	(0.62)	(0.35)	(0.34)	(0.51)
Size [log (ME)]	6.94	6.52	5.02	4.24
	(1.72)	(1.53)	(1.22)	(1.06)
C/P (percent)	-2.07	8.82	16.82	32.59
	(18.52)	(3.39)	(4.04)	(12.61)
N	50	42	18	12

(Figures in parentheses are standard deviations and N denotes the number of observations in each portfolio)

In Table 4.1, the portfolios sorted by earnings yield have been presented. The stocks with high earnings yield have higher dividend yield, higher capital gain yield and higher total yield. It is, therefore, the average dividend yield increased from 1.25 percent for the low to 14.22 percent for the high portfolio. Similarly, the average capital gain yield increased from 5.94 percent for the low to 29.84 percent for the high portfolio. The average total yield also increased from 2.90 percent for the low to 40.65 percent for the high. Moreover, the stocks with high earnings yield are less variable than that of low earnings yield as indicated by the lower standard deviation of book to market equity ratio, size and cash flow yield in high earning yield portfolio. However, the dividend yield, capital gain yield and total yield for the high portfolio are more variable as compared to low earnings yield portfolio.

Furthermore, size variable is negatively related with earnings yield, whereas, book to market value ratio and cash flow yield are positively correlated with earnings yield. The average of size decreased from 6.94 for the low to 4.24 for the high earnings yield portfolio. Moreover, the size for the low portfolio is more variable than that of high earnings yield portfolio. The average book to market value ratio increased from 0.46 times for the low to 1.29 times for the high earnings yield portfolio. Similarly, the average of cash flow yield increased from –2.07 percent for the low to 32.59 percent for the high portfolio. However, both book to market value ratio and cash flow yield for the low are more variable as compared to high earnings yield portfolio.

PANEL: B

Panel B summarizes statistics of portfolios sorted by firm's size in the following table 4.2. It shows that larger stocks have lower dividend yield. The average dividend yield decreased from 6.34 percent for the smallest to 3.86 percent for the largest portfolio. However, the dividend yield for the smallest portfolio is more variable as compared to largest portfolio. In contrast to the dividend yield, larger portfolios have higher capital gain yield and total yield. The average of capital gain yield increased from 12.48 percent for the smallest portfolio to 42.02 percent for the largest portfolio. Similarly, the average total yield increased from 18.32 percent for the smallest portfolio to 44.93 percent for the largest portfolio. Moreover, both capital gain yield and total yield for

the smallest portfolio are less variable than that of largest portfolio. Besides, the negative relationship of size has been observed with earnings yield, book to market value ratio and cash flow yield. The average earnings yield decreased from 15.64 percent for the lowest portfolio to 5.66 percent for the largest portfolio. Similarly, the average of book to market value ratio decreased from 1.68 times for the smallest to 0.32 times for the largest portfolio. The average cash flow yield also decreased from 18.68 percent for the smallest portfolio to 8.92 percent for the largest portfolio. However, the earnings yield, book to market value ratio and cash flow yield for the smallest portfolio are more variable than that of largest portfolio.

Table 4.2

Summary Statistics for Portfolio Sorted by Size

Portfolios/Bases of Portfolio	1 (Low) < 8.00	2 8.00 to 9.10	3 9.11 to 10.00	4 (High) >10.00
Dividend yield (percent)	6.34	5.12	4.32	3.86
	(5.92)	(4.10)	(3.85)	(3.58)
Capital gain yield (percent)	12.48	18.45	29.07	42.02
	(36.48)	(54.78)	(74.02)	(71.68)
Total yield (percent)	18.32	24.72	40.20	44.93
	(32.10)	(52.84)	(82.20)	(76.24)
E/P (percent)	15.64	8.48	6.42	5.66
	(14.98)	(27.85)	(12.03)	(4.40)
B/M (times)	1.68	2.64	0.46	0.32
	(5.40)	(12.55)	(0.24)	(0.16)
Size [log (ME)]	3.66	4.88	6.98	18.94
	(0.40)	(0.52)	(0.38)	(0.92)
C/P (percent)	18.68	16.32	14.02	8.92
	(12.44)	(20.24)	(15.85)	(5.76)
N	21	46	35	20

(Figures in parentheses are standard deviations and N denotes the number of observations in each portfolio)

PANEL: C

In this panel, summary statistics of portfolios sorted by Book to Market Equity (B/M) ratio is tabulated and analyzed as follows:

Table 4.3

Summary Statistics for Portfolios Sorted by Book to Market Equity (B/M) ratio

Portfolios/Base of Portfolio	1 (Low) < 0.20	2 0.20 to 0.35	3 0.36 to 0.75	4 (High) >0.75
Dividend yield (percent)	2.51	2.73	3.44	5.57
	(3.44)	(2.95)	(4.64)	(6.26)
Capital gain yield (percent)	56.66	34.52	10.29	6.06
	(102.44)	(77.44)	(32.72)	(28.98)
Total yield (percent)	58.82	30.65	14.43	8.88
	(112.40)	(69.29)	(38.25)	(64.55)
E/P (percent)	2.04	8.42	12.32	18.96
	(26.94)	(10.66)	(11.02)	(15.70)
B/M (times)	0.12	0.48	0.92	1.67
	(0.32)	(0.18)	(0.22)	(0.47)
Size [log (ME)]	6.46	6.98	5.52	4.28
	(1.40)	(1.33)	(1.12)	(1.01)
C/P (percent)	2.23	11.97	17.76	22.37
	(16.24)	(10.04)	(12.06)	(16.14)
N	52	24	29	17

(Figures in parentheses are standard deviations and N denotes the number of observations in each portfolio)

In Table 4.3, the portfolios sorted by book to market value ratio are presented. The stocks having high book to market value ratio have higher dividend yield. The average dividend yield increased from 2.51 percent for the smallest portfolio to 5.57 percent for the largest portfolio. However, the dividend yield for the largest portfolio is more variable than that of smallest portfolio. The stocks having high book to market value ratio have lower capital gain yield and total yield. The average capital gain yield

decreased from 56.66 percent for the smallest portfolio to 6.06 percent for the largest portfolio. Similarly, the average total yield decreased from 58.82 percent for the smallest portfolio to 8.88 percent for the largest portfolio. Moreover, both of capital gain yield and total yield for the smallest portfolio are more variable than that of largest portfolio.

Among the fundamental variables, the positive relationship of book to market value has been observed with earning yield and cash flow yield, whereas negative relationship with size. It is, therefore, the average of size decreased from 6.46 for the smallest portfolio to 4.28 for the largest book to market value portfolio. Similarly, size for the smallest portfolio is more variable than that of the largest portfolio. In contrast to the size, the average earnings yield increased from 2.04 percent for the smallest portfolio to 18.96 percent for the largest portfolio. Moreover, the average cash flow yield increased from 2.23 percent for the smallest portfolio to 22.37 for the largest portfolio. However, both of earnings yield and cash flow yield for the low portfolio are more variable as compared to high portfolio.

PANEL: D

Panel D summarizes statistics of portfolios sorted by Cash flow to Price (C/P) ratio or cash flow yield in the following table 4.4. The stocks having high cash flow yield have higher dividend yield. The average dividend yield increased from 1.22 percent for the smallest portfolio to 10.66 percent for the largest portfolio, and higher dividend yield for the largest portfolio is more variable as compared to smallest portfolio. However, the stocks having high cash flow yield have lower capital gain yield and total yield. The average capital gain yield decreased from 34.74 percent for the smallest portfolio to 18.02 percent for the largest portfolio. Similarly, the average of total yield decreased from 28.15 percent for the smallest portfolio to 18.08 percent for the largest portfolio. Moreover, both of capital gain yield and total yield for the smallest portfolio are more variable than that of the largest portfolio.

Among the fundamental variables, cash flow yield is positively related to earnings yield and book to market value, whereas negative related with size. It is, therefore, the

average of earning yield increased from -6.51 percent for the smallest portfolio to 28.89 percent for the largest portfolio. Similarly, the average book to market value ratio increased from 1.40 percent for the smallest portfolio to 1.43 percent for the largest portfolio and size decreased from 6.07 percent for the smallest portfolio to 4.84 percent for the largest portfolio. Moreover, earning yield, size and book to market value ratio for the smallest portfolio are more variable than that of the largest portfolio.

Table 4.4

Summary Statistics for Portfolios Sorted by Cash flow to Price (C/P) ratio

Portfolios/Base of Portfolio	1 (Low) < 3.50	2 3.50 to 6.00	3 6.01 to 9.00	4 (High) >9.00
Dividend yield (percent)	1.22	3.96	7.02	10.66
	(1.82)	(2.09)	(4.44)	(7.64)
Capital gain yield (percent)	34.74	30.81	18.61	18.02
	(82.51)	(68.79)	(40.11)	(38.55)
Total yield (percent)	28.15	48.55	22.40	18.08
	(65.83)	(91.02)	(52.58)	(41.88)
E/P (percent)	-6.51	8.86	15.26	28.89
	(26.90)	(2.59)	(6.80)	(12.29)
B/M (times)	1.40	0.69	0.88	1.43
	(2.61)	(1.03)	(0.96)	(0.50)
Size [log (ME)]	6.07	6.22	5.10	4.84
	(1.79)	(1.44)	(1.46)	(1.20)
C/P (percent)	2.02	8.95	16.37	28.52
	(17.68)	(2.80)	(2.98)	(12.28)
N	52	34	15	21

(Figures in parentheses are standard deviations and N denotes the number of observations in each portfolio)

4.1.2 Regression Analysis

Regression analysis is a mathematical measure of the average relationship between two or more variables in terms of original units of data. There are two types of variables in regression analysis-dependent variable and independent variable. The variable whose value is influenced or is to be predicted is called dependent variable whereas the variable which influences the value or is used for prediction is called independent variable. Thus, regression analysis studies the statistical relationship between the variables. The main objective of regression analysis is to predict or estimate the value of dependent variable corresponding to a given value of independent variables. When regression analysis studies the statistical relationship between two variables only, then it is known as simple regression analysis and if the statistical relationship between the dependent variable and two or more independent variables are measured, then it is known as multiple regression analysis.

In our current study, we have undertaken simple as well as multiple regression analysis of stock returns (dividend yield, capital gain yield and total yield) with four of the fundamental variables (earning yield, size, book to market equity ratio, and cash flow yield) in the following section.

4.1.2.1 Regression of Dividend Yield on Fundamental Variables

The regression results of dividend yield on earnings yield, size, book to market equity and cash flow yield are presented in Table 4.5. The first four models include one of the four independent variables at a time. Models 5 to 7 include various combinations of the fundamental variables and model 8 includes all the four fundamental variables simultaneously. The results of these alternative specifications deeply support the summary statistics for the portfolios presented in Table 4.1, 4.2, 4.3 and 4.4. The results are as expected and encouraging and more or less similar to the results indicated by Chan, Hamao and Lakonishok (1991) conducted in the context of Japanese stock market. The dividend yield is positively influenced by earnings yield, book to market value and cash flow yield, and negatively influenced by size.

In model 1 of table 4.5, the regression constant (a) or intercept is 2.93 which indicate that when E/P, Size, B/M and C/P are equal to zero, then DY of the sampled enterprises would be 2.93 percent. Similarly, the regression coefficient of earnings yield is 0.12 which indicates that 100 percent change in E/P causes 12 percent change in dividend yield in positive direction holding other fundamental variables such as size, B/M and C/P constant. As the regression coefficients of book to market equity ratio and cash flow yield are also positive in Model 3 and 4, similar generalization can be made about these fundamental variables as that of the coefficient of earning yield in Model 1. Moreover, the coefficient of size is -0.99 (negative) in Model 2 which signifies that 100 percent change in size variable causes 99 percent change in dividend yield in opposite direction holding other fundamental variables such as E/P, B/M and C/P constant. Besides, in model 1, SEE=3.97 which indicates that the regression estimation $DY=a+b_1(E/P)$ has error by 3.97%. It further signifies that the estimated dividend yield and actual dividend yield can deviate by 3.97%. Thus, earnings yield, book to market value and cash flow yield have individually and reliably positive influence on dividend yield as indicated by the positive regression coefficients of these variables in different models while a reliably negative association is observed between dividend yield and size as reflected by the negative regression coefficients of size in different combination or models.

Furthermore, the regression coefficients of earnings yield are significant for the models 1, 5 and 6. Similarly, the regression coefficients of size are also significant for the models 2, 5 and 6 while the regression coefficients of cash flow yield are significant for the models 4, 7 and 8. Model 5 attempts to unravel the separate influence of earnings yield and size on dividend yield as the regression coefficients of both of these fundamental variables are significant. Moreover, the models in which t-statistics of regression coefficients of fundamental variables are significant suggest that the underlying regression coefficients are estimated with a high degree of precision and the variables do not dominate each other. It is, therefore, adding the book to market value ratio as the third independent variable in model 6 does not rob the predicting power of earning yield and size as the coefficients of earning yield and size continues to appear significant even in Model 6. In model 7, earnings yield is replaced by the cash flow yield measure. Furthermore, the cash flow yield may be more informative than other two variables in model 7 as the regression coefficient of cash

flow yield only is significant at 1% level of significance. In model 8, when all the fundamental variables are simultaneously included, only the t-statistics of cash flow yield has been found to be significant. The results suggest that the cash flow yield may be more important in predicting dividend yield than other variables. Moreover, the overall regression equation is significant at 1 percent level of significance as reflected by the help of F-test.

Table 4.5

Estimated Relationship between Dividend Yield and Fundamental Variables

Models	Intercept	Regression Coefficient of				R^2	SEE	F
		E/P	LS	B/M	C/P			
(1)	2.89 (8.97)*	0.12 (6.21)*				0.081	4.52	37.90*
(2)	21.92 (4.05)*		-0.91 (3.01)*			0.024	5.01	9.71
(3)	2.39 (2.64)*			3.98 (4.35)		0.001	5.91	18.87
(4)	2.66 (4.23)*				0.17 (7.03)*	0.078	5.13	47.98*
(5)	14.84 (3.05)*	0.17 (5.68)*	-0.89 (2.47)**			0.093	5.52	20.42*
(6)	21.02 (2.61)**	0.14 (4.31)*	-0.66 (2.09)**	1.02 (0.65)		0.094	5.34	12.75*
(7)	14.39 (1.98)		-0.65 (1.67)	0.42 (0.28)	0.16 (5.31)*	0.097	5.08	18.33*

(8)	13.49 (1.66)*	0.09 (0.31)	-0.61 (1.49)	0.33 (0.21)	0.24 (3.34)*	0.098	5.21	13.96*

Source: Annual report of SEBON

Notes:

(1) Figures in parentheses are t-values.

(2) The signs * and ** denote that the results are significant at 1 percent and 5 percent level of significance respectively.

(3)The results are based on pooled cross-sectional data of 30 enterprises with 122 observations for the period of 2005/06 to 2009/10 by using linear regression model. The model is, $DY = a + b_1 (E/P) + b_2 (LS) + b_3(B/M) + b_4(C/P) + U_i$. Where, DY, E/P, LS, B/M and C/P are dividend yield, earnings yield, market capitalization, book to market ratio and cash flow yield respectively. Results for various subsets of independent variables are presented as well.

4.1.2.2 Regression of Capital Gain Yield on Fundamental Variables

Table 4.6 presents the regression results of various models of capital gain yield on earnings yield, size, book to market value and cash flow yield. The overall results show the positive relationship of capital gain yield with earnings yield and size, and negative relationship with book to market value and cash flow yield. It may be due to more fluctuations in capital gain yield than other variables.

The t-statistics suggest that the book to market value coefficients are more significant and, therefore, has higher predictive power than other variables. In model 8, when all the fundamental variables are simultaneously included, t-statistics are found to be significant except for all except size. Therefore, size may not play an important role in predicting capital gain yield than others. However, the regression equation in the models 1 and 4 are not good fitted as indicated by insignificant F-statistics. Moreover, coefficients of multiple determination (R^2) also don't support the models as they are unable to explain even marginal percentage of total variation in capital gain yield.

Table 4.6

Estimated Relationship between Capital Gain Yield and Fundamental Variables

Models	Intercept	Regression Coefficient of				R^2	SEE	F
		E/P	LS	B/M	C/P			
(1)	27.10 (3.50)*	0.29 (1.22)				0.00	61.05	1.54
(2)	-99.09 (2.21)		8.85 (2.42)			0.019	60.11	7.09
(3)	39.17 (4.65)*			-24.02 (2.31)*		0.002	62.20	6.07
(4)	22.97 (3.29)*				-0.03 (0.03)	0.004	63.13	0.02
(5)	-131.20 (2.52)*	0.44 (1.66)	10.22 (2.97)*			0.022	60.91	5.10
(6)	59.56 (0.64)	1.32 (3.68)*	0.26 (0.06)	-56.46 (3.47)*		0.021	54.00	7.76
(7)	-37.76 (0.46)		4.21 (0.96)	-31.52 (2.08)**	-0.79 (1.81)	0.023	61.27	4.12
(8)	112.23 (1.27)	2.53 (3.81)*	2.40 (0.54)	-62.45 (3.84)*	-1.51 (2.20)**	0.028	56.01	7.22

Source: Annual report of SEBON

Notes:

(1) Figures in parentheses are t-values.

(2) The signs * and ** denote that the results are significant at 1 percent and 5 percent level of significance respectively.

(3)The results are based on pooled cross-sectional data of 30 enterprises with 122 observations for the period of 2005/06 to 2009/10 by using linear regression model. The model is, $CY = a + b_1(E/P) + b_2(LS) + b_3(B/M) + b_4(C/P) + U_i$. Where, CY, E/P, LS, B/M and C/P are capital yield, earnings yield, market capitalization, book to market ratio and cash flow yield respectively. Results for various subsets of independent variables are presented as well.

4.1.2.3 Regression of Total Yield on Fundamental Variables

Table 4.7 presents the regression results of total yield on earnings yield, size, book to market value and cash flow yield. The alternative specifications of the models reveal the positive relationship of total yield with earnings yield and size, whereas, negative relationship of total yield with book to market value and cash flow yield. Model 1 provides insignificant relationship between total yield and earnings yield whereas models 5, 6 and 8 provide significant relationship between total yield and earnings yield. Similarly, models 2, 5 and 6 indicate the significant relationship between total yield and size, and models 7 and 8 provide insignificant relationship between them.

Of the four variables considered, book to market value has higher explanatory power than other variables as indicated by significant relationship between total yield and book to market value in models 3, 6, 7 and 8. The cash flow yield is found to be weak in determining the total yield, since only model 7 provides the significant relationship between total yield and cash flow yield. The F-statistics and coefficients of multiple determinations suggest that the models 1, 3 and 4 may not provide the validity of the results as indicated by the insignificant F-statistics, and coefficients of multiple determinations being unable to explain even 1 percentage of total variation in total yield.

Table 4.7
Estimated Relationship between Total Yield and Fundamental Variables

Models	Intercept	Regression Coefficient of				R^2	SEE	F
		E/P	LS	B/M	C/P			
(1)	26.03 (4.71)*	0.47 (1.75)				0.00	61.08	3.21
(2)	-87.09 (1.62)		8.10 (2.35)**			0.019	62.06	5.57**
(3)	44.50 (5.14)*			-19.98 (2.02)**		0.002	62.71	4.13
(4)	28.96 (3.90)*				-0.19 (0.56)	0.00	64.24	0.30
(5)	-120.50 (2.25)**	0.51 (2.12)**	9.53 (2.77)*			0.022	61.77	5.22**
(6)	80.61 (0.92)	1.50 (4.10)*	1.16 (0.28)	-59.99 (3.56)*		0.025	57.87	7.88
(7)	-23.22 (0.28)		3.64 (0.83)	-30.00 (2.08)**	-0.91 (2.20)**	0.023	60.99	4.01
(8)	112.90 (1.32)	2.46 (3.79)*	3.15 (0.13)	-64.02 (3.82)*	-1.32 (1.87)	0.039	57.94	6.99

Source: Annual report of SEBON

Notes:
(1) Figures in parentheses are t-values.

(2) The signs * and ** denote that the results are significant at 1 percent and 5 percent level of significance respectively.

(3)The results are based on pooled cross-sectional data of 30 enterprises with 122 observations for the period of 2005/06 to 2009/10 by using linear regression model. The model is, $TY = a + b_1(E/P) + b_2(LS) + b_3(B/M) + b_4(C/P) + U_i$. Where, TY, E/P, LS, B/M and C/P are total yield, earnings yield, market capitalization, book to market ratio and cash flow yield respectively. Results for various subsets of independent variables are presented as well.

The overall results of study can be summarized as follows:

• Earnings yield and cash flow yield have significant positive impact on dividend yield, and an insignificant impact on book to market value, whereas, size has negative impact on dividend yield. In the case of earnings yield and cash flow yield, cash flow yield has been found to be more informative than earnings yield.

• Capital gain yield is positively influenced by earnings yield and size whereas the same is negatively influenced by book to market value and cash flow yield. Book to market value has been found to be statistically strong in predicting capital gain yield.

• Similarly, total yield is positively determined by earnings yield and size whereas the same is negatively determined by book to market value and cash flow yield. Book to market value has been found to be more informative than other variables.

• The positive relationship exists among earnings yield, book to market value and cash flow yield. However, the size is negatively related to these three variables.

4.1.3 Correlation Analysis

Correlation analysis establishes the closeness of relation between two and more variables. It measures the degree of relationship or association between variables. In this section, the study examines the correlation among fundamental variables (E/P, Size, B/M and C/P) and stock returns (DY, CY and TY). Table 4.8 shows the correlation matrix of the fundamental variables and returns of sampled enterprises.

Table 4.8
Correlation Matrix

	E/P	B/M	LS	C/P	DY	CY	TY
E/P Pearson correlation Sig.(2tailed)	1	0.041 0.584	-0.175(*) 0.003	0.972(*) 0.011	0.284(*) 0.006	0.003 0.966	0.006 0.875
B/M Pearson correlation Sig.(2tailed)		1	-0.160(*) 0.008	0.035 0.547	-0.034 0.553	-0.046 0.46	-0.047 0.451
LS Pearson correlation Sig.(2tailed)			1	-0.189(*) 0.002	-0.158(**) 0.01	0.140(**) 0.012	0.141(**) 0.013
C/P Pearson correlation Sig.(2tailed)				1	0.286(*) 0.02	-0.024 0.73	-0.014 0.845
DY Pearson correlation Sig.(2tailed)					1	-0.093 0.157	-0.052 0.404
CY Pearson correlation Sig.(2tailed)						1	0.986(*) 0.031
TY Pearson correlation Sig.(2tailed)							1

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

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

Thus, from the above correlation matrix table, it is observed that earnings yield has significant positive correlation with cash flow yield (0.972), dividend yield (0.284) and an insignificant positive correlation with book to market ratio (0.041), capital gain yield (0.003) and total yield (0.006). But it is negatively correlated with size (-0.175) at 0.01 level of significance. Book to market ratio is positively correlated with earnings yield and cash flow yield (0.035) but it is negatively correlated with size (-0.160), dividend yield (-0.034), capital gain yield (-0.046) and total yield (-0.047).Regarding firm size, there is negative correlation with earnings yield, book to market ratio, cash flow yield (-0.189) at 0.01 level of significance, and dividend yield (-0.157) at 0.05

level of significance. Moreover, size is positively correlated with capital gain yield (0.140) and total yield (0.141) at 0.05 level of significance. Cash flow yield is positive correlated with earnings yield and dividend yield (0.286) while it is negatively correlated with size, capital gain yield (-0.024) and total yield (-0.014) at 0.01 level of significance. Dividend yield has insignificant negatively correlation with capital gain yield and total yield. Moreover, there is strong positive correlation between capital gain yield and total yield at 0.01 level of significance and weak negative correlation between total yield and dividend yield.

4.2 Analysis of Primary Data

This section contains the analysis of respondents' opinion regarding the fundamental analysis of Nepalese stock returns of NEPSE listed companies, collected through questionnaire survey. Data collected from secondary sources usually have certain limitations. In order to verify the reliability and validity of secondary data results, it would be useful to conduct a survey of practitioner. Only quantitative data analysis is not sufficient so that qualitative data analysis also become important. After scanning various secondary data sources, primary data is collected for meeting the specific objective of this study. The responses collected from the respondents are analyzed in order to gain an insight into the opinion of Nepalese executives and finance officers on the fundamental analysis of stock returns. The results of the same is analyzed and presented under this section.

The financial executives selected for the purpose of this study included such positions as finance managers, chief accountants, account officers, accountants, general managers, managing directors and finance practitioners too. It was based on interview collected for financial executives. The following is the qualitative analysis relating to major aspects of stock returns in Nepalese context.

4.2.1 Sector-wise Preference of Investors

Regarding sector wise preference for investment, the investors were asked in which sector they were interested to invest. The answers revealed 60% of the total investors

were interested in banking sector, 18% were interested in insurance companies and others included 8%, 4%, 6% and 2% respectively in manufacturing and processing, hotels, trading and others. The table below summarizes the respondent's views.

Table 4.9

Sector-wise Preference of Investors

S. No.	Variables	No. of respondents	Percentage of respondents
1	Banking/Finance Sector	30	60%
2	Insurance Companies	9	18%
3	Manufacturing and Processing	4	8%
4	Hotels	2	4%
5	Trading	3	6%
6	Others	1	2%
	Total	50	100%

4.2.2 Investors Awareness

The objective of the question was to know whether investors were aware about the factors affecting stock returns in Nepalese stock market. 38% of the total respondents were found unaware while 32% were aware about the market and remaining 30% had moderately updated about the factors affecting stock returns. Table 4.10 shows the data below:-

Table 4.10

Investors Awareness in Stock Market

S. No.	Variables	No. of respondents	Percentage of respondents
1	Yes	16	32%
2	No	19	38%
3	Moderately aware	15	30%
	Total	50	100%

4.2.3 Investors Satisfaction

Regarding the inquiry whether the investors were satisfied with the returns from their investment in stocks, 44% of the respondents were not, only 38% of the respondents

were satisfied and 18% of the respondents were moderately satisfied with the returns from their investment in stock market.

Table 4.11

Investor's Satisfaction in Stock Market

S. No.	Variables	No. of respondents	Percentage of respondents
1	Yes	19	38%
2	No	22	44%
3	Moderately satisfied	9	18%
	Total	50	100%

4.2.4 Factors Affecting Returns

With respect to factors affecting stock returns, 60% of the respondents indicated that earnings yield is the major factor, 20% of the respondents revealed that dividend payout ratio affects stock returns, 16% attributed to size and 4% of the respondents considered book to market equity ratio affects stock returns. These findings are more or less similar to the findings of Davis (1994) and qualitative analysis undertaken in this study.

Table 4.12

Factors Affecting Returns

S. No.	Variables	No. of respondents	Percentage of respondents
1	Earning Yield	30	60%
2	Dividend Payout ratio	10	20%
3	Book to market equity ratio	2	4%
4	Size	8	16%
	Total	50	100%

4.2.5 Effects of Earnings on Stock Returns

With respect to whether the enterprises having higher earnings yield will have higher dividend payout, 70% of the respondents stated that higher earnings yield would result in higher dividend payout, 20% of the respondents said no and 10% of the respondents were unaware about the fact. These findings are consistent with the findings of Basu

(1983), Bal (1978) and Davis (1994) in the developed capital market as well as Pradhan (2004) in the Nepalese context.

Table 4.13

Effects of Earnings on Stock Returns (Dividend Payout)

S. No.	Variables	No. of respondents	Percentage of respondents
1	Yes	35	70%
2	No	10	20%
3	Don't Know	5	10%
	Total	50	100%

4.2.6 Relation between Size and Stock Returns

With respect to the inquiry regarding the relation between size and stock returns, 80% of the respondents indicated that there exists negative relation between stock returns and size; 20% of the respondent's revealed positive association between stock returns and size. Hence, the questionnaire with the financial executives revealed that the large sized enterprises would generate lower returns. This finding is consistent with the findings of Banz (1981) in the developed capital market.

Table 4.14

Relation between Size and Stock Returns

S. No.	Variables	No. of respondents	Percentage of respondents
1	Positive relationship	10	20%
2	Negative relationship	40	80%
	Total	50	100%

4.2.7 Government's Policies in Stock Market

Government policies directly affect the behavior of stock market which in turn influences on stock returns as well. Increase in the tax rate in capital gain from 10% to 15% is the example in recent days which has affected stock returns adversely. The policy of the government is not clear and perfect in Nepalese stock market. Different respondents were asked whether the policies were clear and the following results were

found. 72% of the respondents replied that government policy of stock market is not clear and perfect, 16% of the respondents replied that the policy is clear, however, 12% were unknown.

Table 4.15

Government Policies in Stock Market

S.No.	Variables	No. of respondents	Percentage of respondents
1	Yes	8	16%
2	No	36	72%
3	Don't Know	6	12%
	Total	50	100%

4.2.8 Causes of Holding Shares/Stocks

Investors were asked for their motive of holding shares and the results revealed that 50% of them held stocks in order to gain right and bonus shares while 32% of the totals were holding to get short term benefit or capital gains, as it seemed to be of speculative motive and the remaining 18% were holding stocks in expectation of dividend income.

Table 4.16

Causes of Holding Shares/Stocks

S.No.	Variables	No. of respondents	Percentage of respondents
1	Right and bonus shares	25	50%
2	Short term/Capital gains	16	32%
3	Dividend income	9	18%
	Total	50	100%

4.2.9 Trading Practices and Stock Price Determination in NEPSE

The respondents were provided some common statements regarding share price determination of NEPSE listed companies and they were asked how much they agree regarding these statements. Majority of the respondents strongly agreed on future price movements of the stock can be predicted by analyzing the historical price changes and volume of transactions. Most of the respondents agreed on the statement that stock price prediction is possible by estimating and analyzing the fundamental facts of the

company. All the respondents strongly agreed on earnings of firm are considered as important factor in stock pricing. So, far as price movement is concerned, the respondent strongly disagreed on statement that the price movement is purely random, the future prices of stocks can't be predicted at all.

4.2.10 Analyzing the Answers to Open-ended Question on Fundamentals of Nepalese Stock Returns

The respondents were also asked to give their opinion on fundamentals of stock returns in the context of Nepalese Stock Exchange in one open-ended question included in the questionnaire. Out of 50 respondents, only 30 of them give their views for the issue. Some respondents admired that it is better to consider fundamental factors of stock returns. All of the respondents raised the issue of administrative part of Nepalese stock market. Some expressed their views that due to non transparent operation and delay in disseminating information regarding company's financial status and shares, they were in dilemma whether to purchase or sell the shares. Similarly, others blame that brokers in the secondary market did not provide proper advices for clients. As a result, they had to bear losses while trading stocks. Brokers purchase shares for their clients on an "execution only basis" and do not take responsibility for their quality of advices they offered. Therefore, according to them brokers performed the function in the capital market not for investor's sake but only for reaping their commissions from investors. Hence, majority of them indicated the need of reliable and impartial financial analysts and advisors to guide the investors to take proper investment strategy.

In this open-ended question, some respondents viewed that the regulating authorities are not serious to protect the small investors from unwarranted manipulation of stock prices practiced by the large investors with the help of brokers. The remaining responses to this open ended question varied among investors to investors. The Nepalese stock market is growing satisfactorily. However, the regulating mechanism is not strong enough to monitor nourish and protect the market.

4.3 Concluding Remarks

To sum up, fundamental analysis of stock returns in Nepal reveals that the annual dividend yield during the 2005/06 to 2009/10 periods were positively related to earnings yield and cash flow yield and negatively related to size but not significantly related to book to market equity ratio. Capital gain yield and total yield have been negatively influenced by book to market equity ratio and cash flow yield whereas the same is positively influenced by earnings yield and size. In secondary data analysis of the study, book to market equity ratio has been found to be statistically strong in predicting stock returns, especially capital gain yield and total yield.

In essence, the overall results of primary data analysis give the impression that the Nepalese stock market is not efficient and is in its weak form. Respondents believe that the stock prices are not random and future prices can be estimated by analyzing the historical information; the notion clearly provides the evidence of market inefficiency. The analysis of the open-ended question gives the impression that the related stakeholders are much worried about the administrative aspect of security market. Raising the administrative issues of the NEPSE, majority of the respondents indicated the need of financial analysts and advisors, who can guide the investors for appropriate investment strategy.

CHAPTER-V

SUMMARY, CONCLUSIONS AND RECOMMMENDATIONS

5.1 Summary

Stocks are one of the popular financial assets available for investment. Investors in general expect two kinds of returns on stock investment in the form of dividends and capital gains or stock price appreciation. Rational investors consciously examine the behavior of stock returns with different fundamental variables and then invest their funds in efficient portfolios from which they can realize higher rate of return.

This study mainly aims at examining the relationship between stock returns (i.e. dividend yield, capital gain yield and total yield) and fundamental variables (i.e. earnings yield, size, book to market equity ratio and cash flow yield) in the context of Nepalese stock market. The specific objectives of this study are :- (1) to analyze the significant relation between fundamental variables and stock returns in Nepal, (2) to examine if dividend yield, capital gain yield and total yield are related to earnings yield, size, book to market ratio and cash flow yield, (3) to measure the effect of fundamental variables on stock returns of the Nepalese companies, (4) to estimate the summary statistics for portfolios sorted by earnings yield, size, book to market equity ratio and cash flow yield, (5) to analyze the properties of portfolios formed on dividend yield, capital gain yield and total yield of Nepalese enterprises.

This study is based on primary as well as secondary data. In order to conduct the study, the necessary data on stock returns, fundamental variables and other related variables were collected from the annual report of SEBO/N through its official website: http//www.sebonp.com and NEPSE Limited's website- http://www.nepalstock.com and even from the websites of sampled enterprises. Besides, these other necessary data and information regarding stock market were collected by visiting various institutions (for example, NEPSE Limited, SEBON, sampled firms etc). The 30 enterprises out of 176 enterprises listed in NEPSE Limited are selected for the study.

This study applied pooled cross-sectional data analysis of 30 enterprises with 122 observations. For the period of 2005/06 to 2009/10, the summary statistics for portfolios sorted by fundamental variables such as earnings yield, size, and book to market equity ratio and cash flow yield are estimated to examine the overall relationship between stock returns and fundamental variables. The sampled enterprise's stock's returns are grouped into four portfolios based on increasing value of fundamental variables as bases. Furthermore, various regression models and possible alternative statistical specifications have been used to confirm the relationship and for the robustness of the results. All the regression results are obtained via SPSS computer program. In this study, the results are tested at 1 percent and 5 percent levels of significance.

Major Findings

The study of fundamentals of stock returns reveals the following major findings:

a) Findings from the Study of Role and Impact of Fundamental Variables on Stock Returns

- The overall results reveal significant positive relationship of dividend yield with earnings yield and cash flow yield whereas negative relationship with size. Of all the four variables considered, cash flow yield has been found to have strong explanatory power in predicting the dividend yield than other variables as indicated by the regression coefficients of cash flow yield being significant in all of the models in which it has representations.

- There is positive relationship of capital gain yield with earnings yield and size whereas negative relationship with book to market value of equity ratio and cash flow yield. Book to market value has been found to be more informative in explaining capital gain yield than other variables.

- Total yield is positively related to earnings yield and size whereas negatively related to book to market equity ratio and cash flow yield. Of all the four variables considered, book to market value has been found to

be more informative than other variables and may play important role in predicting total yield as compared to other variables.

b) Findings from the Study of Summary Statistics of Portfolios

Other things remaining the same, the major findings from the study of summary statistics for portfolios sorted by earning yield, size, and book to market equity ratio and cash flow yield can be summarized as follows:

- The stocks with higher earnings yield have dividend yield, capital gain yield, total yield, book to market equity ratio and cash flow yield. In contrast, stocks with high earning yield have lower size. Moreover, book to market equity ratio, size and cash flow yield for the low earning yield portfolio are more variable as compared to high portfolio. However, dividend yield, capital gain yield and total yield for the low earning yield portfolio is less variable than that on high portfolio.

- The large sized companies have lower dividend yield, earning yield, book to market equity ratio and cash flow yield while higher capital gain yield and total yield. However, dividend yield, earnings yield, book to market equity ratio and cash flow yield for the small sized companies are more variable than that of large sized companies while both of capital gain yield and total yield for the small sized companies are less variable than that of large sized companies.

- The stocks having high book to market equity ratio have higher dividend yield, earnings yield, and cash flow yield where as lower capital gain yield, total yield and size. However earnings yield, cash flow yield, size, capital gain yield and total yield for the low book to market equity ratio portfolio are more variable as compared to high portfolio. In contrast, dividend yield for the high portfolio is more variable than low portfolio.

- The stock having high cash flow yield have higher dividend yield, earnings yield and book to market equity ratio whereas lower capital gain yield, total

yield and size. However, dividend yield for the high portfolio is more variable than that of low portfolio while earning yield, size, book to market equity ratio, capital gain yield and total yield for the low cash flow yield portfolio are more variable than that of high portfolio.

- Among others, dividend yield has significant positive relation with earnings yield and cash flow yield, insignificant relation with book to market ratio and negative relationship with size.

- Among others, capital gain yield is positively related to earnings yield and size whereas negatively related to book to market equity ratio and cash flow yield. Book to market equity ratio is more significant and has a higher predictive power than other variables. Therefore, book to market equity ratio may play important role in predicting capital gain yield.

- There is positive relationship of total yield with earning yield and size whereas negative relationship with book to market equity ratio and cash flow yield. Among the four variables, book to market equity ratio has been found to have strong impact on total yield and is more informative than other variables.

- The positive relationship exists among earning yield, book to market ratio and cash flow yield whereas size is negatively related to these three variables.

5.2 Conclusions

The major conclusion of this study reveal a significant relation between returns in the Nepalese market and four fundamental variables-earnings yield, size, book to market equity ratio and cash flow yield. Earnings yield and cash flow yield have significant positive impact on dividend yield while book to market equity ratio has an insignificant impact on dividend yield whereas size has negative impact on dividend yield. Capital gain yield is positively influenced by earnings yield and size whereas the same is negatively influenced by book to market equity ratio and cash flow yield. Similarly, total yield is positively determined by earnings yield and size whereas the

same is negatively influenced by book to market equity and size. The study also concludes that positive relationship exists among earnings yield, book to market equity and cash flow yield. However, the size is negatively related to these three variables.

5.3 Recommendations

Based on the data analysis and major findings, the following suggestions and recommendations are made:-

- As stock with higher earnings yield have higher dividend yield, the enterprises should try to maximize earnings to satisfy the dividend needs of common stock holders.

- The study indicates that book to market equity ratio is negatively related to total yield. Hence, Nepalese enterprises should attempt to maintain the lower book to market equity ratio for the higher returns on stock.

- The companies with higher stock returns are not able to provide stable returns. Their stock returns are more variable. Therefore, attempt should be made to achieve stability in returns.

- NEPSE Limited could not make financial statements available of all listed companies. So, it should delist such companies which do not submit financial statement on time.

- Attempt should be made to encourage the companies to get them listed in NEPSE Limited; number of companies should be increased and incentives should be given for listing.

- Listing is popular in financial sectors only. Other sectors should also be encouraged, for example, manufacturing, hotels, trading and airlines etc.
- Monitoring system for the listed companies should be promulgated properly.

- Asymmetry of information between insiders and outsiders should be ended by dissemination of information. Especially non-banking sectors industries are never disseminating information timely and regularly; price sensitive information should be disseminated on regular and timely basis.

- Investor's education, awareness and confidence towards stock market should be uplifted by providing various booklets, bulletins and regular publication of market information, reviews and scenarios.

- General investors should be encouraged to invest in non-banking sectors. So the public confident should be gained providing assurance that non-banking companies also can provide ample amount of return increasing their profitability.

- Development of institutional investors is essential. This is because institutional investors possess knowledge and money. Individual investors can't stabilize the market.

- Government of Nepal has adopted the policy of opening up of secondary market for the foreign investors. So all the required amendments in the concerned act are to assure the safety of investors and also for easy repatriation of investment as well as dividend.

5.4 Direction for Future Research

There are several avenues for future research in the area of effect of fundamental variables on stock returns. One of the research avenues is to make the study by adding more companies in the sample and expanding study parts. A second avenue of research is to estimate better model in explaining the effect on returns from other fundamental variables through the recent models available in the literature. Finally, an important direction of research is to survey the opinion of financial executives, financial experts and shareholders on effect of fundamental variables on financial performance of Nepalese companies by increasing the sample size.

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Appendix I

Opinion Questionnaire Survey

on

Fundamentals of Stock Returns in Nepal : A study of selected companies

This opinion questionnaire survey is conducted as a means of primary data collection on the thesis work entitled 'Fundamentals of Stock Returns in Nepal: A study of selected companies' and the thesis work is undertaken as a partial fulfillment of the requirements for the degree of Master of Business Studies (M.B.S)

Your response will be highly appreciated and acknowledged in this study. Besides, it will also be treated as confidential and results of analysis will be presented in an aggregate or group basis.

Sadeep Acharya
Researcher
Global College of Management

Name (Optional):

Name of the Institution involved with:

Position/Designation:

Periods in Current position:

1) In which of the following sector do you want to invest in share?

(a) Banking
(b) Insurance Companies
(c) Manufacturing and Processing Companies
(d) Hotels
(e) Trading
(f) Others

2) Do you think investors in the Nepalese stock market are aware about the factors affecting stock returns?

(a) Yes (b) No (c) Moderately aware

3) Are you satisfied with the returns from your investment decision in stocks?

(a) Yes (b) No (c) Moderately satisfied

4) Which of the following factors do you think mainly affect returns?

(a) Size (Market Capitalization) (b) Earnings Yield
(c) Book to Market equity ratio (d) Dividend Payout ratio

5) Do you think that the enterprises having higher earnings have higher stock returns (dividend payout)?

(a) Yes (b) No (c) Don't Know

6) In your opinion, what kind of relation exists between stock returns and size?

(a) Positive relationship (b) Negative relationship

7) Are government's policies clear and perfect in Nepalese Stock market?

(a) Yes (b) No (c) Don't Know

8) For what purpose do you want to invest in the shares of a company?

(a) Right/bonus Shares (b) Short term/Capital gain (c) Dividend Income

9) Please specify how far you agree or disagree with the following statements:
(Make a tick- mark on appropriate box as per the following scheme for each statement)

1= Strongly agree 2=Agree 3=Do not know

4=Disagree 5=Strongly Disagree

S.No.	Statements	1	2	3	4	5
a.	Future price movement of stocks can be predicted by analyzing the historical price changes and volume of transactions.					
b.	Insiders' information can be used to forecast the prices and beat the market.					
c.	Stock price prediction is possible by estimating and analyzing the fundamental facts of the company like expected future earnings, cash flows, dividends, book to market ratio, size etc.					
d.	As the price movement is purely random, the future prices of stocks can't be predicted at all.					

10) Give your opinion regarding fundamentals of stock returns in Nepalese stock market.

a)…….

b)…….

c)……..

11) Any other remarks (Comments):

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……
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Thank You!