CHAPTER- I

INTRODUCTION

1.1 Background of the Study

Nepal is a landlocked country with agro-based economy. The country is divided into Mountains, hills, Terai regions with its geographical nature. Economic status of our country is growing very slowly and Nepal is known as very poor country all over the world. Development of the different institution is equally essential for the rapid economic development of the country like trade, commerce, and industry and agricultural.

Nepal is an agro dominated country where the majority of the people are farmers. The landlocked and complex geographical situation has further worsened to develop the country. The poor resources mobilization, lack of entrepreneurship, lack of institutional commitment, erratic government policies and poor governance are responsible for slow pace of development. However, the prospects is not so despair because the country is rich in natural resources, the market economy is becoming strong due to globalization and liberalization. Economic liberalization and policy reforms are the present needs since the market economy is becoming strong World wide. After the restoration of democracy in 1990 and universal echo of economic liberalization, Nepal has implemented liberal economic policy. As a result many more companies are established in different sectors such as industrial, tourism, transportation, trade and mostly in the financial sector whose contribution in economy has great significance.

Development in the financial terms is the efficient flow and generation of the funds in the most productive sectors. The nation having effective funds collection from the each and every corner of the country and investing them in the productive areas are the economic heroes at the present scenario. Financial institution plays vital role for the economic development of a country. However, Nepal has not been able to achieve the desired income which is due to the poor capital market situation and initial stage of modern economy.

Among these circumstances, capital market and its extensity also play great roles. Capital market generates and liquidates the security as per the requirements. So is the reason, extension of capital market is only the way to productive mobilization of the funds. But unfortunately, Nepalese capital market has not efficient communication network even today. It has made capital market less efficient and inefficiency result the risk. Even though it is hoped that Nepalese capital market will be moving towards efficiency in the days to come.

The history of securities market began with the floatation of shares by Biratnagar jute Mills Ltd. and Nepal Bank Ltd. in 1937.Introduction of the company Act in 1964, the first issuance of Government Bond in 1964 and the establishment of Securities Exchange Centre Ltd. in1976 were other significant development relating to capital markets.

When security exchange centre converted into Nepal Stock Exchange (NEPSE) in 1993, the objectives of this institution become; to import free marketability and liquidity to the government and corporate securities by facilitating transactions in its only trading floor through market intermediaries' i.e. brokers as well as market makers.

Nepal Stock Exchange, in short NEPSE, is a non –profit organization, operating under securities Exchange Act, 1983.NEPSE opened its trading floor on 13th January 1994.Member of NEPSE are permitted to act as intermediaries in buying and selling of government bonds and listed corporate securities.

At present Nepal have so many banks and insurance companies performing different tasks. It shows there is perfect competition between these institutions. Commercial banks are working more effectively. It is because, the banks have highly skilled personnel, modern banking services, and international network and country suited services.

However, two big banks namely, **Nepal Banks Ltd. and Rastriya Banijya Bank** are going to be run by contracted management, which shows still Nepalese commercial banks have some practical problems and limitations.

Besides all these, banks are performing various functions such as money creation and generation, deposit collection, credit extension, credit card issue and cheque

transaction, import letter of credit, traveler cheque, export bill, issue of draft, telex transfer and safe keeping of value.

If a company has surplus cash, it can buy back outstanding numbers of shares, which is known as repurchase of shares. In the developed capital market, corporations are allowed to buy shares back for better utilization of their unused cash. However, Nepalese company acts 1997, section 47 has prohibited company from purchasing its own shares and supply loans against the security of its own shares

People invest their money for satisfactory and expected return. To these objectives, firms distribute the earnings to their shareholders. Earning is that amount which remains after deducting all operational and non operational expenses. Shareholders expectations may vary with their investment priorities. Some invest for capital appreciation of stock and some for earning as dividend.

In the capital market, all firms operate in order to generate earnings. Shareholders make investment in equity capital with the expectation of making earnings either directly in the forms of dividend or indirectly in the forms of capital gains in future. Shareholders wealth can be increased through either dividends or capital gains.

The main focus of investors is the dividend. But there is not any consistency and regular practice of dividend announcement in different firms. They are extremely different as per their dividend policies. Similarly in secondary market the declaration of the dividend or the dividend policy of the firm changes the market price of the shares. Therefore it is expected that there is some impact of dividend policy over the market price of the stock.

Dividend Policy & Market Price of Stock (MPS)

Once a company makes a profit, it should decide on what to do with the profit. It could continue to retain the profit within the company, or it could payout the profit to the owners of the company in the form of dividend. Dividends are payments made to stockholders from a firms earning in return to their investment, whether those earnings were generated in the current periods and policy refers to the decision about how much earnings at what form should be distributed. Thus dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained or reinvested in the firm. The objective of a dividend policy is maximization of shareholders wealth position.

Dividend policy however is still a crucial as well as controversial area of managerial finance. It is more technical area of finance in the sense that it is complex on having numerous implications for the firm. Dividend policy may affect the areas such as financial structure of the firm, funds flow, stock prices, investors' satisfaction, growth of the firm etc like other major decision of the firm, i.e. investment and financing decision, the dividend decision has major role in any organization.

Dividend policy reflects the firm's decision to pay out earnings or to retain them for reinvestment in the firm. The dividend decision is the choice between retention and investment of earnings on the other hand and the payout of earnings to the shareholders as dividend. It determines the division of earnings between payments to stock holders and reinvestment in the firm

In practice, company pays whole earnings as dividend at the beginning to create better image and existence in the financial market but later they may change their policy and announce a certain percentage of dividend payout term.

The dividend payout ratio may be different but the common dividend payout ratio (D/P ratio) is 40% as the different studies reveal. Keeping all these things into consideration, it could be said that the actual owner of the firm or company are not treated rightly by not giving sufficient and reasonable dividend. Moreover in some companies dividend is not announced. But recently the trends of the dividend payment are increasing.

In the Nepalese context, dividend policy is less balanced. Theoretical & Practical deviation has proved everything as written is not practiced and everything practice is not of actual theory. Therefore dividend policy is the practice, strategy or decision made by a firm as per their requirements to establish market reputation as well as to meet general expectations of the shareholders.

The payment of the corporate dividend is at the discretions of the Board of Directors. Most corporations pay dividend quarterly. Dividend may be paid in cash, stock or merchandise. Cash dividend is the most common, merchandise dividends are the least common, Stockholders are not premised a dividend but he/she grows to expect certain payment on historical dividend pattern of the firm. Before dividend are paid to common stockholders the claims of creditors, the government and preferred stockholders must be satisfied.

The regularity of dividend payment and the stability of its rate are the two main objectives aimed by the corporate management. They are accepted as desirable for corporation's credit standing and for the welfare of shareholders. High earning may be used to pay extra dividend, but such dividend should be designated as extra and care should be taken to avoid the impression that the regular dividend is being increased. A stable dividend should not be taken to mean inflexible or rigid policy. On the other hand, it entails the payment of fair rate of return, taking into account the normal growth of the business and the gradual impact of external event. Higher the value of dividend higher will be the market value of the share.

Market price of the stock (MPS) is the trading price of the stock listed in authorized or legal stock exchange. In context of Nepal, MPS is the price that is coated for purchasing or selling under Nepal Stock Exchange Act or related laws and regulations, on the stock exchange floor.

MPS is the value of stock, which can be obtained by a firm from the market. Market value of a share is one of the variables, which is affected by the dividend per share and earning per share of the firm. If the earning per share and dividend per share is high, the market value per share will also be high. Market value of the share may be high or low than the book values. If the firm is growing concern and it’s earning power is greater than cost of capital, the market value of the share will be higher than the book value. If the firm’s earning capacity is lower than cost of capital MPS will also be lower. MPS is determined by capital market.

Market price of the stock usually fluctuates by the adequate information. No one can earn more in the inefficiency and inefficiency is legally prohibited in order to regulate the security market in every nation. But being focused in this study, dividend policy and its impact on market price of stock, there should be discussed different models and practices which have significant effects in MPS or not. So MPS and security valuation are integral parts in it. With out valuation no one can coat the price there is no chance of trading.

Every day in newspaper one can see the market price of the different shares from different companies. The trading of the share definitely requires the MPS which can be obtained by the stock valuation. Share valuation is an economic process generates rational securities prices. Although the price fluctuations may appear to be chaotic,

they are random fluctuations that result from the random arrival of the new information.

Dividend policy and MPS has always correlation; if the company pays high dividend the MPS increases and vice-versa. But in some cases out of this interrelation, the price may remain constant or decrease too. Therefore the information lack or flow is also vital in the analysis of MPS.

1.2 Focus of the Study

Economic development of a country largely depends upon the effective mobilization on the internal resources. Banks and other financial institutions play vital role in this regard banks have the objective of collecting the scattered resources and mobilize them in productive sectors. In this context, dividend policy is the key instrument, which reflects the firm's ability of internal financing. The dividend decision affects the overall financing decision of the firm and also affects the shareholders perception to the firm. The earning power, dividend and retention have a significant impact on market price of share.

The main focus of the study is the commercial banks about the impacts of dividend policy on market price of share. For these purpose different other studies are going to be done i.e. comparison of earning per share(EPS),dividend per share (DPS),market price per share (MPS) and others as per the requirement with respect to the sample firm. The relationship between different variables will be individually and combine analyzed in this study.

1.3 Statement of the Problem

Shareholders make investment in equity capital with the expectation of making earnings. Dividend is a kind of earnings that the shareholders expect from their investment. But There are many studies on dividends and stock prices, for example, Modigliani and Miller (1961) Linter (1962), Gordan (1963), Friend and Puckett (1964),Walter(1966),Elton and Gruber (1970),Black and Schools (1974) Lichtenberger and Ramaswamy (1982), Chawla and Srinivasan (1987). However, no simple and conclusive relationship exits between the dividend pay and the market price of share. There was considerable controversy concerning the relationship between dividend and common stock prices. The affect of dividend policy on

corporation's market value or market price of share is a subject of long standing argument but there no single conclusive result regarding the relation between the dividend payment and market price of the share,

There is no doubt that when firm got much earning, shareholders would also expect much dividend. But earning is also treated as financing sources for the firm. If the firm retains earning then it decreased leverage ratio, expansion of activities and increase in profit in succeeding years whereas if firm pays dividend, it may need to raise capital through capital market which may dilutes the ownership control of the existing shareholders. On condition debenture, it will affect on risk characteristic of the firm. Therefore, there are many dimensions to be considered on dividend theories, policies and practices.

The capital market is an important part of corporate development of a country. Even though capital market is in the early stage of development in Nepal, Nepalese investors made more investment on newly established companies, especially in the financial sector. Dividend is the most inspiring aspect for the investment in the share of various companies for an investor. Even if dividends affected the firm's value, unless management knows exactly how they affect, there is not much that they can do to increase shareholders wealth. So, it is necessary for management to understand how the dividend policy affects the market price of the stock or the wealth position of the shareholders.

Thus this study seeks to answer the following question:

a) What are the factors that affect the dividend and valuation of the firm?

b) What is the stock price behavior after the announcement of dividend?

1.4 Objectives of the Study

The main objective of the study is to obtain in depth the knowledge about the impact of dividend policy adopted by the selected companies to its market price of shares as well as the overall valuation of the firms. The specific objectives are as follows:

- To highlight the dividend policies and practices in Nepal carried out by the selected banks.

- To analyze the variables such as profit, dividend per share, dividends pay out ratio, dividend yield and relation with market value.

1.5 Significance of the Study

As dividend is one of the crucial factors in every organization and dividend policy decision is one of the most important decisions, this might serve to be important information for these respective firms taken as sample. Besides, the shareholders and financial institutions may also be benefited from this study. This study will support the future researcher by providing valuable information. Especially the significance of this study can be summarized in the following points:

- Helpful for the further researcher in this field.
- The study helps to the management, shareholders and policy maker in setting and making a suitable dividend policy.
- To raise public awareness about dividend policy and market price of share relation in order to help them for rational decision of their investment.

1.6 Limitations of the Study

Basically the research is done for the partial fulfillment of MBS. But the research has its own limitation which is listed below:

- The study covers the relevant data and information for only eight years 2004/05 to 2011/2012.
- The major portion of analysis &interpretation has been done on the basis of available secondary data & conclusion is strictly depending upon the reliability of secondary data & information.
- Time and financial constraints are the major limitation of the study. The report has to submit within the time period.
- The researcher being the beginner in this area, this report cannot remain without flaws. Best effort has been done to make this report with minimum error; existence of unnoticed errors is also a major limitation of the study.

- Among many commercial banks only four banks are selected for the study i.e. Himalayan Bank, Nepal Investment Bank Limited, NABIL Bank Limited, Standard Charter Bank Nepal Limited.

1.7 Organization of the Study

This study is divided into five chapters, which are as follows:

Chapter I includes the introduction & general background, statement of problem, objectives of the study, significance of the study and limitation of the study. Hypothesis is set up in this chapter.

Chapter II includes review of literature, in this chapter the review from books, journals thesis and independent studies are taken into account.

Chapter III is Research Methodology. It includes the research design, data collection procedure, tools for analysis and method of analysis and presentation.

Chapter IV is data presentation and analysis part; it is the main body of our research. It includes data presentation, interpretation and analysis.

Chapter V includes the summary and conclusion of the research. And finally suggestion and recommendations are given.

CHAPTER- II

REVIEW OF LITERATURE

This chapter contains the review of different sources of literature such as books, journals, research paper and other studies related to the dividend policy. It has been expected that the review will help to make the research more effective and useful. The chapter has been divided mainly into two parts as: Conceptual Framework and Review of Previous Studies on the relevant field.

2.1 Conceptual Framework

2.1.1 Dividend

Dividend refers to the part of earnings made by the firm that is distributed to the shareholders as return of their investment over equity share whether those earnings were generated in the current period or in previous periods. In other words, it is the rewards to shareholders for bearing the risk of uncertainty (Ghimire; 2002:8). Once a company makes a profit, it should decide on what to do with the profit. It could continue to retain the profit within the company, or it could pay out the profit to the owners of the company in the form of dividend. Every firm prefers to make somewhat rational balance between these two alternatives. The firm adopts different approaches to distribute dividend according to their objectives. Given the objective of maximization of shareholders wealth, the firm should use net profits for paying dividends to the shareholders. Conversely, the firm should retain profit to finance the investment opportunities if the objective is to expand the business (Bhurtel; 2002:16).

The objective of a dividend policy should be to maximize the shareholder's return so that value of his investment is maximized (Pandey; 1995:739).Return consists of two components: dividends and capital gains. Dividend policy has a direct influence on these two components of return. The impact of dividend policy on future capital gain is however complex. Capital gains occur in distant future, and therefore, are uncertain. Normally, it is said that the low payout policy accelerates earnings growth; investors of growth companies will realize their return mostly in the form of capital gains. But, it is not certain that low payout policy will lead to higher prices in reality. It is quite difficult to clearly identify the effect of payout on share price. Share price is a

reflection of so many factors that the long-run effect of payout is quite difficult to isolate.

A high payout policy means less retained earnings, which will consequently result in slower growth and perhaps lower market price per share. A low payout policy will result into higher growth, higher capital gains and perhaps higher market price per share. Capital gains are, however, more uncertain than current dividends, but current dividends are taxed more than capital gain. Therefore, it is quite plausible that some investors would prefer high- payout companies while others may prefer low-payout companies. Thus, the relationship between dividend and the value of the share is not clear cut (Pandey; 1995:740). There are different decision models developed to analyze the situation and come to a conclusion as a decision. However, these decision models are still conflicting. One school of thought argues that dividend payment has no impact on valuation of the firm whereas other theories of dividend argue it to be an active variable in valuation (Bhurtel; 2002:16).

2.1.2 Theories of Dividend

There are two fundamental theories of dividend:

A. Residual Theory

Residual theory of dividend suggests that the first priority should be given to the profitable investment opportunities (Gitmen;1988:616).If there are any profitable opportunities, the firm invests in those and than only the residual (remaining) amount of earnings (if any) would be distributed to the shareholders. Under this theory the firm first determines the optimum level of investment opportunity schedule (IOS) and weighted average cost of capital (WACCA). Using the optimum capital structure proportion, the firm estimates the total equity-financing requirement to undertake the investment opportunities. Since the cost of internal equity (retained earnings), Kr, is less than the cost of new common stock, Ke, retained earnings would be used to meet the equity-financing requirement. If retained earnings are not sufficient to meet the requirement, new common stocks are to be sold. Any retained earnings left this would be distributed as dividend (Bhattarai; 2002:19-20).

B. Wealth Maximization Theory

Larger dividend is announced and distributed to shareholders under this theory in order to maximize their wealth. This theory is generally adopted by the newly established and declining companies to upkeep it's image and retain the shareholder's positive attitude towards the company's stock (Bhattarai; 2002:20).

2.1.3 Forms of Dividend

The usual practice is to pay dividends in cash. Other options for distributing earnings are also available to the company, which are follows:

A. Cash Dividend

Cash dividend is the dividend paid in cash. It is the most popular and widely used form of dividend all over the world. Everyone likes to collect their return in cash rather than non cash means. So, cash dividend is not only a way to distribute earnings, but also a way to improve perception of the capital market (Niraula; 2003:12). A company should have enough cash in its bank account when cash dividends are declared. If the company does not have enough bank balance at the time of paying cash dividend, arrangement should be made to borrow funds. When the company follows a stable dividend policy, it should prepare a cash budget for the coming period to indicate the necessary funds which would be needed to meet the regular dividend payments of the company. It is relatively difficult to make cash planning in anticipation of dividend needs when an unstable dividend policy is followed (Pandey; 1995:775).

The cash account and the reserves account of a company will be reduced when the cash dividend is paid. Thus, both the total assets and the net worth of the company are reduced when the cash dividend is distributed. The market price of the share drops in most cases by the amount of the cash dividend distributed (Hastings; 1996:370).

B. Bonus Shares

An issue of bonus shares represents a distribution of shares in lieu of or in addition to the cash dividend (also know as stock dividend) to the existing shareholders. This has the effect of increasing the number of outstanding shares of the company. The shares are distributed proportionately. Thus, a shareholder retains his proportionate ownership of the company. The declaration of the bonus shares will increase the

equity share capital and reduce the reserves and surpluses (retained earnings) of the company. The total net worth is not affected by the bonus issue. In fact, a bonus issue represents a recapitalization of the owners' equity portion, i.e., the reserves and surpluses (Pandey; 1995:775-776).

C. Scrip Dividend

When earnings of the company justify dividends, but the company's cash position is temporarily week and does not permit cash dividend, it may declare dividend in the form of scrip or notes promising to pay the dividend within the specified future period of time (maturity). In this method of dividend, company issues and distribute to shareholders transferable promissory notes which may be interest bearing or not. Scrip dividends are justified only when the company has really earned profit and have only to wait for the conversion of other current assets into cash in the course of operation.

D. Property Dividend

If the company pays the dividend in the form of property or assets rather than cash, it is known as property dividend. When the company has unnecessary or useless assets for the operation of the business, it is distributed to the shareholders as property dividends. In some cases, the company pays subsidiary company's shares as dividend. Property dividends are least used practice and only used when extra ordinary circumstances exist. Similarly the payment of dividend as subsidiary company's shares in place of cash dividend could result the negative impact as the shareholders may feel the shares that are paid to them are of less value therefore they are paid (Niroula;2003:15).

E. Bond Dividend

If dividends are paid in the form of bond, promising that is will mature in the future data, it is known as bond dividend. Similar to scrip dividend the intention and purpose of bond dividend is to postpone the dividend payment for sometime but is has more obligations. Bond divided carries relatively longer maturity period than that of scrip dividend (Niroula; 2003:15).

2.1.4 Dividend Policy

The policy, which decides on how much of the earnings a firm should retain for re-investment and how much it should pay to shareholders, as dividend is known as dividend policy. It is the third major decision of a firm, which aims at maximization of shareholders wealth.

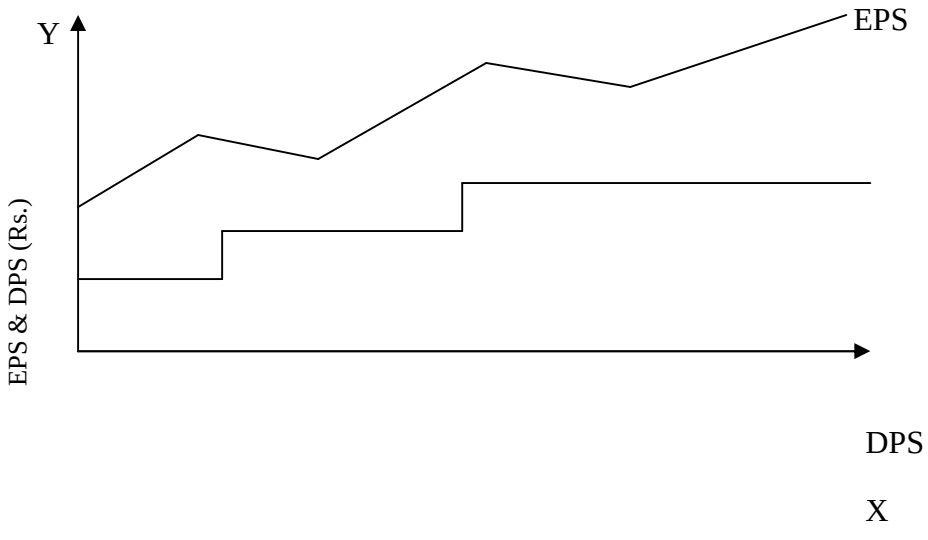
Dividend policy determines the division of earnings between reinvestment in the firm and payments to shareholders. Retained earnings are one of the significant for financing corporate growth, but dividends refer to the cash flow that accrues to shareholders (Weston and Copeland; 1991:657). Stability or regularity of dividends is considered as a desirable policy by the management of companies. Three of the more commonly used dividend policies are:

i. Constant dividend policy

Constant dividend policy is based on the payment of affixed Rupees. Dividend in each year/period. A number of companies follow the policy of paying fixed amount per share as dividend every year, without considering the fluctuation in the earning of the company. The policy does not imply that the dividend per share of dividend rate will never be increased. When the company reaches new level of earnings and expects to maintain it the annual dividend per share may be increased.

Figure 2.1

Constant Dividend per share Policy



Constant Dividend per Share Policy

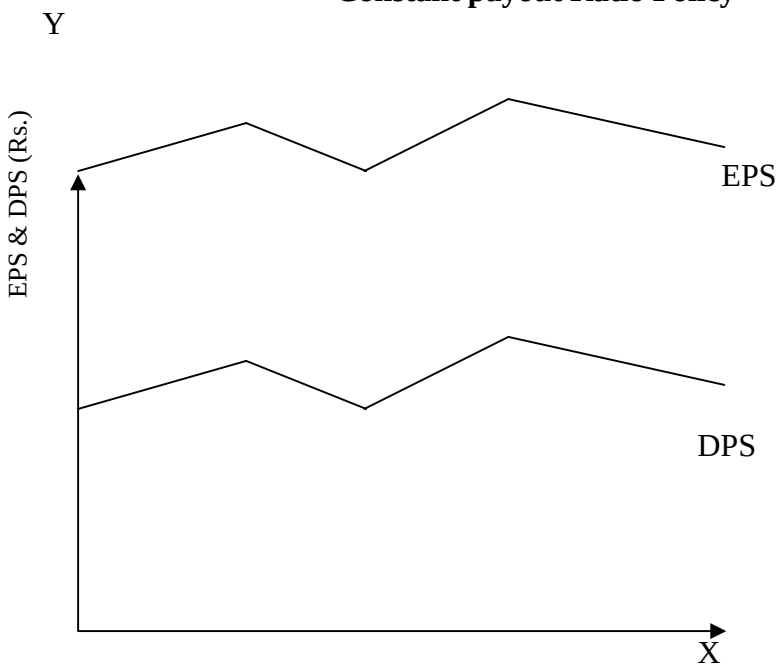
Investors who have dividends as the only source of their income prefer the constant dividend policy.

ii. Constant Payout Ratio

The ratio dividend to earning is known as payout ratio. When fixed percentage of earnings is paid as dividend in every year, the policy is called constant payout ratio. Since earning fluctuates, following this policy necessarily means that the Rs. Amount of dividend will fluctuate. It ensures that dividends are paid when profits are earned and avoided when it incurs losses, regardless of the desire of the share holders.

Figure 2.2

Constant payout Ratio Policy



Constant Payout Ratio Policy

iii. Low Regular Dividend plus Extras

The low regular dividend plus extras policy is a compromise between the first two. It gives the firm flexibility, but it leaves investors somewhat uncertain about what their dividend income will be. If a firm's earnings are quite volatile, however, this policy may be best policy.

2.1.5 Factors Influencing Dividend Policy.

Many considerations may affect a firm's decision about its dividends. Some of the more general considerations are given subsequently (Gautam and Thapa; 2003:251-253):

i. Legal Rules

A firm may be legally restricted from declaring and paying dividends. Such legal constraints fall into two categories. First, statutory restrictions may prevent a company from paying dividends. Generally, a corporation may not pay a dividend (i) if the firm's liabilities exceeds its assets, (ii) if the amount of the dividend exceeds the accumulated profits (retained earnings), and (ii) if the dividend is being paid from capital invested in the firm. The second type of legal restrictions is unique to each firm and results from restrictions in debt and preferred stock contracts.

ii. Liquidity Position

The cash or liquidity position of the firm influences its ability to pay dividends. A firm may have adequate retained earnings, but if they are invested in fixed assets, cash may not be available to make dividend payment. Thus, the company must have adequate cash available as well as retained earning to pay dividends.

iii. Need to Repay Debt

Debt can be used as a source of financing but it should be refunded at maturity by replacing it with another form of security, or it can make provisions for paying off the debts. If the decision is to retire the debt, it will require the retention of earning rather than pay dividend.

iv. Restrictions in Debt Contracts

Debt contract may restrict a firm to pay cash dividend. Restrictions in debt contracts may specify that dividends may be paid only out of earnings generated after signing the loan agreement and only when net working capital is above a specified amount. Also, preferred dividends take precedence over common stock dividends.

v. Rate of Assets Expansion

The more rapidly growing firm requires more fund for expansion of assets. The greater the future need have fund, the more parts of profit retained into firm rather

than pay dividend. A firm with more investment opportunities will pay a lower fraction of its earnings as dividends than a stable firm.

vi. Profit Rate

The expected rate of return on assets determines of paying out earnings in the form of dividends to stock-holders or using retained earnings to acquire assets for the firm. A high rate of profit on new assets makes it desirable to retain earnings rather than to pay them out if the investor will earn less on them.

vii. Stability of Earnings

It is easy to predict approximately future earnings if the firm's earnings is stable. The more stable the income stream, higher the dividend payout ratio, than the firm with fluctuating earnings. The firm with stable earnings is more confident of maintaining a higher payout ratio but the unstable firm is not certain for future earnings, so it is likely to retain a high proportion of current earnings.

viii. Access to Capital Market

A large, well-established firm with a record of profitability and stability of earnings has easy access to capital market and other forms of external financing but small, new firm is riskier for potential investors. A firm which can issue new stock or bonds at low cost (such as underwriting commissions) will be more likely to have a high dividend payout ratio. But the small and new firm must retain more earnings to finance its operation.

ix. Control

Dividend policy may be strongly influenced by shareholders' or management's control objectives. If shareholders want to control the firm to their own control they retain the earnings, uses to repurchase the stock or uses to acquire assets rather than issue shares. Finance through issuing additional common stock dilutes the control of the dominant group in that firm and selling debt increasing the risks of fluctuating earnings of the firm.

x. Tax Position of Stockholders

The tax position of Stockholders also affects dividends policy. If a firm has a large percentage of wealthy stock holders who are in a high tax bracket, it may decide to payout a lower percentage of its earnings to allow the owners to delay the payment of

taxes until they sell the stock but who needs dividend income will prefer higher payout of earnings.

xi. Desire of Shareholders

Shareholder may be interested either in dividend incomes or capital gains. Wealthy shareholders in a high income tax bracket may be interested in capital gains as against current dividends. A retired and old person, whose source of income is dividend, would like to get regular dividend.

2.1.6 Legal Provision Regarding Dividend Practice in Nepal:

Company Act, 1997 makes some legal provision for dividend payment in Nepal. These provisions may be seemed as under:

Section 140: Dividends and Subsections of this section are as follows:

Subsection 1: Except in the following circumstances, dividend shall be distributed among the shareholders with in 45 days from the date of decision to distribute them.

a) In case any law forbids the distribution of dividends,

b) In case the right to dividend is disputed,

c) In case dividends cannot be distributed with in the time limit mentioned above owing to circumstances beyond anyone's control and without any fault on the part of the company.

Subsection 2: In case dividends are not distributed with in the time limit mentioned in subsection (1), adding interest at the prescribed rate shall do this.

2.2 Review of Related Studies

2.2.1 Review of Major International Studies/Models

1. Walter's Model:

Professor James E.Walter argues that the choice of dividend policies almost always affect the value of the enterprise. His model, one of the earlier theoretical works, shows clearly the importance of the relationship between the firm's internal rate of, r, and its cost of capital, K, in determining the dividend policy that will maximize the

wealth of shareholders. Walter's model is based on the following assumptions (Pandey; 1975:741):

1. The firm finances all investment through retained earnings; that is debt or new equity is not issued.
2. The firm's internal rate of return and its cost of capital are constant.
3. All earnings are either distributed as dividends or reinvested internally immediately.
4. Beginning earnings and dividends never change. The values of the earnings per share, EPS, and the dividend per share, DIV, may be changed in the model to determine results, but any given values of EPS/DIV are assumed to remain constant forever in determining a given value.
5. The firm has a very long or infinite life.

Walter's formula to determine the market price per share is as follows:

$$P = \frac{DIV}{k} + \frac{r(EPS - DIV)/k}{k}$$

$$= \frac{DIV + r(EPS - DIV)/k}{k}$$

Where, P =market price per share

DIV =Dividend per share

EPS =earnings per share

r =internal rate of return (average)

k =cost of capital or capitalization rate

In Walter's model, the optimum dividend policy depends on the relationship between the firm's internal rate of return, r and its cost of capital; k. Walter's view on the optimum dividend-payout ratio can be summarized as follows:

Growth Firms>k

Firm having r>k may be referred as growth firm. The optimum payout ratio for a growth firm is zero. The market value per share, p, increase as payout ratio declines when r>k.

Normal Firms=k

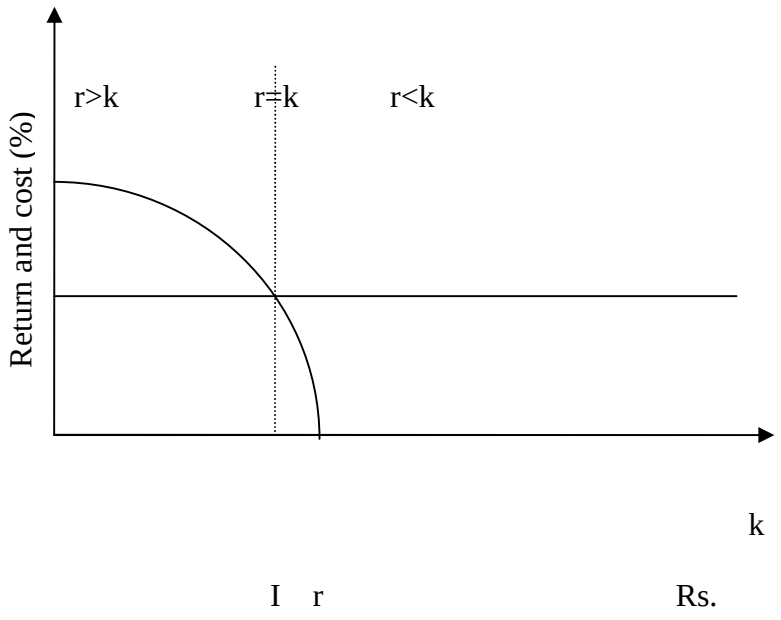
Firm having r=k may be referred as normal firm. There is no unique optimum payout ratio for a normal firm. One dividend policy is as good as the other. The market value per share is not affected by the payout ratio when r=k.

Declining Firms>k

Firm having r>k may be referred as declining firm. The optimum pay out ratio for a declining firm is 100 per cent. The market value per share, increases as pay out ratio increases when r>k.

Figure 2.3

Earning, Investment& New Financing Under Walter's Model



Earning, Investment and New Financing

Thus, in Walter's model, the dividend policy of the firm depends on the availability of investment opportunities and the relationship between the firm's internal rates of return (r) and its cost of capital (k). The firm should use earnings to finance investments if r>l; should distribute all earnings when r<k and would remain indifferent when r=k. Thus, dividend policy is treated as a financing decision; the payment of cash dividends is a passive residual (Solomon; 1963:139-140).

2. Gordon's Model

One very popular model explicitly relating the market value of the firm to dividend policy is developed by Myron Gordon. Myron Gordon made a study on the dividend policy and market price of the stock and concluded that the dividend policy of a firm influences the market value of stock. This is a relevant theory similar to the Walter's model. In the study conducted in 1963, he explained that "the investors prefer present dividend rather than future capital gains". He further explained that the dividend policy has direct relationship with the value of stock even if the internal rate of return is equal to required rate of return.

Gordon's model is based on the following assumptions (Pandey; 1995:745-746).

1. The firm is an all equity firm.
2. No external financing is available. Consequently retained earning would be used to finance any expansion.
3. The internal rate of return, r, of the firm is constant. This ignores the diminishing marginal efficiency of investment.
4. The appropriate discount rate k for the firm remains constant. Thus, Gordon's model also ignores the effect of a change in the firm's risk-class and its effect on k.
5. The firms and its stream of earnings are perpetual.
6. The corporate taxes do no exist.
7. The retention ratio b, once decided upon, is constant. Thus the growth rate, g=br, is constant forever.

8. k>br=g. If this condition is not fulfilled, we cannot get a meaningful value for the share.

According to Gordon's dividend-capitalization model, the market value of a share is equal to the present value of an infinites stream of dividends to be received by the share. Thus:

$$P_0=\frac{D_1}{(1+k)}+\frac{D_2}{(1+k)^2}+\frac{D_3}{(1+k)^3}+\ldots\ldots\ldots\ldots\ldots\ldots+\frac{Dn}{(1+k)^n}$$

Gordon has further developed the following equation for the computation of market value of stock:

$$P=\frac{EPS(1-b)}{k_e-br}$$

Where,

P =Market Price per share

EPS =Earning per share

b =Retention ratio

k_e =Cost of capital

1-b =Payout ratio

br =Growth rate

Gordon's relevant theory is a popular theory of dividend. As investors prefer current dividend earnings rather than expected higher future income so as to eliminate the risk associated with future capital gain, Gordon stressed that the higher payout increases the dividend yield and hence increases the value of stock. But the assumptions of this model are also far from the reality.

2. Modigliani and Miller's Model:

According to Modigliani and Miller (M-M), dividend policy of a firm is irrelevant as it doesn't affect the wealth of the shareholder. They argue that the value of the firm depends on the firm's earnings which result from its investment policy. Thus, when investment decision of the firm is given, dividend decision- the split of earnings

between dividends and retained earnings- is of no significance in determining the value of the firm. M-M's hypothesis of irrelevance is based on the following assumptions (Pandey; 1995:751-752):

1. The firm operates in perfect capital markets where investors behave rationally, information is freely available to all and transactions and flotation costs do not exist. Perfect capital markets also imply that no investor is large enough to affect the market price of a share.
2. Taxes do not exist; or there are no differences in the tax rates applicable to capital gains and dividends. This means that investors value of rupee of dividend as much as a rupee of capital gains.
3. The firm has a fixed investment policy.
4. Risk of uncertainty does not exist. That is, investors are able to forecast future prices and dividends with certainty, and one discount rate is appropriate for all securities and all time periods. Thus r=k=kt for all t.

Modigliani and Miller provided following model to prove their theory (Niroula; 2003:25-26):

Market value of share

The market value of a share at the beginning of the period is equal to the present value of dividend paid at the end of the period plus the market price of the share at the end of the period. Symbolically,

$$P_0 = \frac{D \Gamma P_1}{1 \Gamma k_e}$$

Where,

P_0 =Market price of share at the beginning of the period

D_1 =Dividend per share at the end of the period

K_e =Cost of equity capital

No external financing

If no new external financing exists the market value of a firm can be computed by multiplying both sides by the number of outstanding shares as follows:

$$nP_0 = \frac{n(D_1 \Gamma P_1)}{1 \Gamma K_e} \text{ …….. (ii)}$$

Where,

n=Numbers of outstanding shares

New Shares

If retained earning is not sufficient to finance the investment opportunities, issuing new shares is the other alternative. Assuming that m is the number of newly issued equity share at the price of P1, the value of firm at time 0 will be:

$$nP_0 = \frac{nD_1 \Gamma P_1 (n \Gamma m) Z m P_1}{1 \Gamma k_e} \text{ ……..(iii)}$$

Where,

n = No. of shares at the beginning

m =No. of shares issued at the end of the period

Total numbers of shares

A firm can pay dividends and raise funds to undertake the optimum investment policy. If the firm finances all investment opportunities either by issue of new equity of retained earnings, the total numbers of new shared can be computed on the following way:

$MP_1=I-(E-nD_1)$……. (iv)

Where,

MP_1 =Amount obtained from the sale of new shares

I =Amount required for new investment during the period

E =Total earnings during the period

$E-nD_1$ =Retained earning

nD_1 =Total dividend paid

Substituting the value of mP_1 of equation (iv) to equation (iii) we get,

$$nP_0 = \frac{nD_1 \Gamma P_1(m \Gamma n) Z I \Gamma E Z nD_1}{1 \Gamma k_e}$$

$$= \frac{P_1(m \Gamma n) Z I \Gamma E}{1 \Gamma k_e}$$

A firm which pays dividends will have to raise funds externally to finance its investment plans. M-M's argument, that dividend policy does not affect the wealth of the shareholders, implies that when the firm pays dividends, its advantage is offset by external financing. This means that the terminal value of the share declines when dividends are paid. Thus, the wealth of the shareholders- dividends plus terminal price – remains unchanged. As a result, the present value per share after dividends and external financing is equal to the present value per share before the payment of dividends. Thus, the shareholders are indifferent between payment of dividends and retention of earnings (Pandey; 1995:753-754)

M-M assert that their hypothesis of dividend irrelevance is not affected if the firm raises external funds by issuing debt instead of shares. When external financing involves debt M-M invoke their indifference hypothesis with respect to leverage (Pandey; 1995:754)

2. Linter's Study:

J.Linter conducted a study in 1956, which is focused in "*The Behavioral Aspect of Dividend Policy"*. He investigated dividend pattern of 28 different companies of America and found that, firm generally predetermines the desired payout and tries to achieve it and rarely considers other factors. The model developed from his research is as follow:

$$D^*_t = P.EPS_t$$

$$D_t Z D_{tZ1} = a \Gamma b(D^*_t Z D_{tZ1}) \Gamma e$$

Where,

D^*_t =Desired dividend

EPS_t =Earning per share

P =Targeted payout ratio

a =Constant relating to dividend growth

b =Adjustment factor relating to previous period's dividend and desired level of dividend (b>1).

Major findings of this study are as follows:

i. Firm generally prefer desired proportion of earning to be paid as dividend.

ii. Investment opportunities are not considered for modifying the pattern of dividend behavior.

iii. Firm generally have target payout ratios in view while determining change in dividend per share.

2.2.2 Review of Major National Studies

Nepalese capital market is in the early stage of development. There are only few studies done in this field. Due to the lack of information and expertise, no sufficient studies have been carried out in regards to the dividend policy. However, recent developments in the field of capital markets have shown some rays of hope for the future. Some of the studies done in the field of dividend policy and stock prices have been reviewed hereunder.

2.2.2.1 Review of Journals and Article

Shrestha (1992) presented a paper on "*Shareholder's Democracy and Annual General Meeting Feedback"* on fifth annual general meeting of NABIL Bank Ltd, which has been presented here.

In his view, the common problems and constraints of the shareholders are as follows:

i The cost-push inflation at exorbitant rate has made the shareholders to expect higher return from their investment.

ii. Multiple decrease in the purchasing power of the Nepalese currency to the extent that higher return by way of dividend is just a natural economic consequence of it.

iii. Erosion in the purchasing power of the income has made it clear that dividend payment must be directed to enhance shareholder's purchasing power by raising dividend payment ratio on the basis of both earnings and cost theory.

iv. Indo-Nepal trade and transit deadlock has become a sort of economic welfare putting rise in the cost of living index to a considerable extent. This is the reason, which made shareholders to expect higher demand for satisfactory dividend.

v. The waiting of 5 years with payment of dividend in previous years is equally a strong enforceable reason of the bank's shareholders to expect handsome dividend already assumed and committed in various reports of the earlier annual general meeting.

vi. One way to encourage risk taking ability and preference is to have proper risk return trade off by bank's management board is a way that higher return must be the investment rule for higher risk takers that comprise bank's shareholders.

Pradhan (1993) conducted a landmark study in the field of dividend policy in Nepal. He studied stock market behavior of 17 firms covering the period 1986 to 1990 with the following objectives:

a. To access the stock market behavior in Nepal.

b. To examine the relationship of market equity, market value, price earning and dividend with liquidity, profitability, leverage, assets turnover and interest turnover.

Findings of his study are as follows:

i. Higher earnings in stock leads to the larger ratio of dividend per share.

ii. Stock with larger ratio of dividend per share to market price have lower leverage ratio.

iii. Stock with larger ratio of dividend per share to market price has higher liquidity.

iv. Positive relationship between the ratio of dividend per share to market price and interest coverage ratio.

v. Dividend per share and market price per share are positively correlated.

vi. Positive relationship of dividend payout with liquidity, profitability, assets turnover and interest coverage ratios.

Manandhar (2000) conducted a study on *"Bonus Share and Dividend Changes empirical Analysis in Nepalese Context"* to test the lagged structure of dividend and different hypothesis on relationship of dividend payout and other financial factors were tested. He carried out his study based on the data taken from 17 Nepalese corporate firms and covered the period of 1987 to 1998. The conclusions of his study are as follows:

i. There is significant relationship between changed in dividend policy in terms of DPS and change in lagged earnings.

ii. There is relationship between distributed lagged profits and dividends.

iii. In overall there is a positive relationship between in lagged consecutive earnings and dividend per share.

iv. When change in lagged consecutive earnings is greater than zero, in 65% cases, change in DPS.

2.2.2.2 Review of thesis

Gautam (1996) conducted his master's research on *"A Comparative Study of Dividend Policy of Commercial Banks"* by using the secondary data of three banks in 1996 has the following objectives:

i. To identify what type of dividend policy is being followed and find out whether the policy followed is appropriate or not.

ii. To examine the impact of dividend on share prices.

iii. To identify the relationship between DPS and other financial indicators.

iv. To know if there is any uniformity among DPS, EPS and DPR of the three sample commercial banks.

Major finding of the study are as follow:

i. Average earning per share and dividend per share of all concerned banks are satisfactory.

ii. Analysis indicates the largest fluctuations in earning per share and dividend per share. No banks exhibit constant dividend payout ratio.

iii. No commercial banks seen to be guided by cleanly defined dividend strategy in spite of the good earnings and potentials.

iv. Shares of the financial institution are actively traded and market prices are increasing.

v. Correlation between DPS and EPS of all sample banks is fairly positive. But it is fairly safe to say that the relationship is not significant.

vi. Theoretically, issue of bonus share has equal impact on EPS, MPS, and DPS.But in case of these sample banks, a significant variation in the degree of impact is observed.

Timilsina (1997) conducted his master's research on *"Dividends and Stock Prices: An Empirical Study"* conducted by using the data of 16 enterprises for the period of 1990 to 1994 has the following objectives:

i. To test the relationship between DPS and Stock Prices.

ii. To determine the impact of dividend policy on stock prices.

iii. To identify whether it is possible to increase the market value of the stock changing dividend policy or payout ratio.

To explain the behavior, he used multiple regression models of three independent variables as developed by Friend and Puckett. Further he tired to highlight the relationship between stock price and other independent variables setting separate simple linear regression equations. The findings of the study are as follow:

i. The relationship between DPS and stock prices is positive in the sample companies.

ii. DPS affects the share prices variably in different sectors.

iii. Changing the dividend policy of dividend per share might help to increase the market price of share.

iv. The relationship between stock prices and retained earnings per share is not prominent.

v. The relationship between stock prices and lagged earnings price ratio is negative.

Narayan Prasad Khatiwada (2001) conducted his master's research on *"Impact of Dividend and Earning Announcement on Shareholder's Return and Stock Prices in Nepal"* by the data of six joint venture commercial banks has the following objectives:

i. To analyze the impact of earning and dividend announcement on shareholders return.

ii. To identify the correlation between the return of individual securities with market return.

iii. To identify the quality of systematic and unsystematic risk.

The summary of the major findings of the study is as follow:

i. Announcement of dividend and earning do not affect the shareholders 'return in average.

ii. Shareholders realized positive abnormal return from half of the sample banks.

Manoj Bhattarai (2002) conducted his master's research on *"Dividend Policy and its impact on Market price of Stock"* with the data taken from two commercial banks and two insurance companies, analyzed the data of five years from 1995 to 2000 using simple and multiple regression equations has the following objectives:

i. To study the prevailing practices and efforts made in dividend policy in the Nepalese firms with the help of sample firms.

ii. To find out the impact of dividend policy on market price of stock.

iii. To analyze if there is any uniformity among DPS, EPS, MPS and DPR in the sample firms.

Major findings of his study are as follows:

i. There is not any consistency in dividend policy in the sample firms. It has indicated the need of dividend strategy as well as the need of proper analysis of the respectively sector of the firms.

ii. Most of the Nepalese firm from the very past did not have profit planning and investment strategy, which has imbalanced the whole position of the firms. It means there is no consistency even in the earnings.

iii. The MPS is affected by the financial position and the dividend paid by the firms in this regards the MPS of the sample firms is seem to be fluctuated. It denotes those Nepalese investors are not treated fairly.

iv. The lack of financial knowledge and the market inefficiency has affected the market price of the share in all the firms.

Research Gap

There have been many national and international studies in the field of Dividend Policy to date. Those studies have tried to find out the relationship between dividend policy and market price of the stock. But, as the Nepalese capital market is in the early stage of development, the conclusion made by the international studies may not be relevant in the Nepalese context. So far the Nepalese studies concerned, there are some studies done, like Pradhan's and Manandhar's, which can be considered to be landmark in the field of dividend policy; but many more changes have taken place in Nepalese capital market in last few years and the validity of the past results are doubtful in the present context. Besides this, some researchers have taken only few firms of the same sector as sample and so, the results drawn from those studies may not be accurate to represent the present practices and efforts made in the Nepalese capital markets. So, it is necessary to carryout a fresh study related to dividend pattern of Nepalese companies.

In this study, it is tried to carryout the distinct from other previous studies in items of sample size, nature of the sample firms, and methodology used. The study has covered 4 banks. Seven years data have been analyzed with due consideration of EPS, DPS, DPR and MPS. Analyses of financial indicators, standard deviation, regression analysis etc. are used as the main models in the study with a view to obtain the relevant and accurate results. So, it has been believed that this study will be different than earlier one.

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology indicates the methods and processes employed in the entire aspects of the study. 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 methods, steps, and guidelines, which are to be followed in analysis, and it is the way of presenting the collected data with meaningful analysis.

The main purpose of this chapter is to discuss the research methodology such as research design, population and sample, data collection techniques and analytical tools of the research study. It is widely accepted that research is simply the process of arriving at dependable solution to problem through the planned and systematic collection, analysis and interpretation of data. It is most important tool for advancement of knowledge and accomplishment of purposes.

3.1 Research Design

The research design refers to the conceptual structure within which the research is conducted (Kothari; 1978:22). A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Selltiz; 1962,:50). Fed N.krelings has defined it in his book foundation of Behavioral research as “Research Design is the plan, structure and strategy of investigation concerned so as to obtain answers to research questions and to control variances”. In simple language, its just a planning for a research .It is purposeful scheme of action proposed to be carried out in a sequence during the process of research .Research design helps researcher to enable him to keep track of action and to know whether he was moving in the right direction to achieve his goal.

This study\research is designed so as to find out the impact on the market price of common stock of a company when dividend is paid to shareholders and also how the market price respond when dividend is not paid to the shareholders .In other words, the study is related to the dividend policy and its impact on the share-price and wealth position of the shareholders .Therefore, the descriptive as well as the analytical

approach are adopted here. To make the analysis more effective, financial statements, statistical tools and testing models are also use

3.3. Population and Sample

There are 31 commercial banks that have share trading in stock market. Due to the limited time and resource factors too, only few commecial bank has been selected as sample. There should be no confusion with parameters and size of the companies since the topic is not related to comparison of sizes, but the dividend policy and its effect on market price of shares or simply, the valuation of shares .This study has covered altogether 4 commercial banks out of leading banks of Nepal selected on judgemental basis as follow:

- Himalayan Bank.
- Nepal Investment Bank Limited.
- NABIL Bank Limited
- Standard Charter Bank Nepal Limited.

3.4. Sources of Data

The study is mainly depending upon the secondary data of the selected companies, whose sources may include the Annual Reports of the corresponding companies under study, Economic Report published by Nepal Rastra Bank ,the stock price for the whole year listed in the Nepal stock exchange (NEPSE),Economic Survey published from GON, Ministry of Finance ,Financial Reports published by NEPSE and Securities Exchange Board ,financial and others relevant data regarding the dividend policies and practices of the Banks. Besides this, the data are also collected from various newspapers, magazines booklets and journals published by the concerned governmental and non-governmental organizations.

3.4. Period of Study & No. of Observation

The study is based on seven year's financial data of the 4 commercial banks under study from fiscal year 2004/05 to 2011/12. Thus, the total number of observation of this study is 32(8 | 4).

3.5. Tools and Techniques:

Data collected from various sources have been properly organized, analyzed and presented in appropriate tables and formats. Such tables and formats are subjected to interpretation and explanation as necessary. Specific financial tools and statistical tools are used to analyze variables. Mainly, the analysis has been done using following tools and method:

1. Financial Tools

Financial tools are those, which help to study the financial position of the firms. The financial tools used in the study are as follows:

i. Earning Per Share (EPS)

Earning per Share refers to the rupee amount earned per share of common stock outstanding. It measures the profitableness of the shareholders investment. It shows the profitability of the companies on a per share basis. The higher earning indicates the better achievements in terms of profitability of the companies by mobilizing their funds and vice versa. EPS is computed by dividing net profit after taxes by the total number of common stocks outstanding (Paney, 1995). Thus,

$$\text{Earning Per Share(EPS)} = \frac{\text{Earning available to common Shareholders}}{\text{No. of common Stock Outstanding}}$$

ii. Dividend per Share (DPS)

Dividend per share indicates the rupee earnings distributed to common stockholders per share held by them. It measures the dividend distributed to each equity shareholder. Generally, higher DPS creates positive attitude to the shareholders toward the company's common stock, which consequently helps to increase the market value of the share. And, it also works as the indicator of better performance of the company management. It is calculated by dividing the total dividend distributed to equity shareholders by the total number of equity shares outstanding (Paney, 1995). Thus,

$$\text{Dividend Per Share (DPS)} = \frac{\text{Total amt. of div. paid to ordinary shareholder}}{\text{No. of ordinary shares outstanding}}$$

iii. Dividend Payout Ratio (DPR)

It is the proportion of earning paid in the form of dividend. This ratio shows what percentage of profit is distributed as dividend and what percentage is retained as reserve and surplus for the growth of the companies. The dividend payout ratio of a company depends upon the earnings made by it. Higher earning enhances the ability to pay more dividends and vice versa.

There is an inverse relationship between dividends and retained earnings. The higher the dividend payout ratio, the lower will be the proportion of retained earnings and vice versa. The capacity of internal financing of the firm is checked by the retention ratio (Paney, 1995).

DPR is calculated by dividing DPS by EPS. Thus,

$$\text{Dividend Payout Ratio(DPR)} = \frac{\text{Dividend per Share}}{\text{EarningperShare}}$$

iv. Price Earning Ratio (P/E Ratio)/Earning multiplier

Price earning ratio is also called the earnings multiplier. Price earning ratio is the ratio between market price per share and earning per share. In other word, this represents the amount which investors are willing to pay for each rupee of the firms earnings.

The P/E ratio measures investor's expectation and market appraisal of the performance of the firm. The higher P/E ratio implies the high market share price of a stock given the earning per share and the greater confidence of investor in the firm's future. This ratio is computed by dividing market price per share by earning per share of the firm (Paney, 1995). Thus,

$$\text{P/E ratio/ Earning multiplier} = \frac{\text{Market Price per Share}}{\text{Earning Per Share}}$$

v. Earning yield (EY)

Earning yield is the percentage of earning per share to market price per share in the stock market. In other words, it is a financial ratio relating to earning per share to the market price per share at a particular time. It measures the earning in relation to

market value of share. It gives some idea of how much an investor is earning for his money. The sharer with higher earning yield is worth buying (Paney, 1995). It is calculated as:

$$\text{Earning Yield (EY)} = \frac{\text{Earning per Share}}{\text{Market price per Share}}$$

vi. Dividend Yield (DY)

Dividend Yield is a percentage of dividends per share on market price per share. It measures the 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.

This ratio highly influences the market price per share because a small change in dividend per share can bring effective change in the market value of the share. The share with higher dividend yields is worth buying. Thus, the price of higher dividend yields increase sharply in the market. Dividend has importance guidance to commit funds for the buying of shares in the secondary market. This ratio is calculated by dividing dividend per share by market price of the share (Paney, 1995). Thus,

$$\text{Dividend Yield (DY)} = \frac{\text{Dividend per Share}}{\text{Market price per Share}}$$

vii. Market Price Per Share (MPS) to Book Value per Share (BVS):

This ratio measures the market price per share in the competitive open market with respect to book value per share of the share issuing company. This ratio indicates the price that the market is paying for the share that is reported from the net worth of the company.

This is important to compare the market share price of different stocks on the basis of the book value per share. It shows the market price of a stock as a percentage of book value per share and the effect of later on the former. The higher ratios represent to conclude the better performance of the company in terms of market price per share to book value per share. This ratio can be derived by dividing market price per share by book value per share. Thus,

$$\text{MPS to BVS Ratio} = \frac{\text{Market price per share}}{\text{Book value per share}}$$

viii. Net Worth per Share:

It is a rupee value per share. It is calculated by dividing Book Value of Net Worth (or Net Worth) by total numbers of Shares outstanding (Paney, 1995). Thus,

$$\text{Net Worth per Share} = \frac{\text{Net worth}}{\text{No. of shares}}$$

ix. Market Price per Share (MPS)

MPS is that value of stock, which can be obtained by a firm from the sale of a share in the market. MPS is one of the variables, which is affected by DPS of the firm. If the earning per share and dividend per share are high, the market value of the share will also be high. The capital market determines MPS. In this study the market price of share means the rupees value of one share indicated in NEPSE index.

Theoretically calculated current price of the share can be derived by using the following formulas (Paney, 1995):

$$P_0 = D_1 / (K_s \; Z G)$$

$$= D_0 (1 \Gamma G) / (K_s \; Z G)$$

P0=Current market price per share

D0=Current dividend per share

D1=Expected dividend per share at the end of yr.1

G=Dividend growth rate

Ks=Investor's required rate of return

=Risk free rate of return+ Inflation rate + Market risk premium

- Present Price=PV of dividends during supernormal growth period + Value of stock price at the end of supernormal growth period discounted back to present.
- Price=Dividend/Capitalization rate

2. Statistical tools

Besides the financial tools, various statistical tools have been used to conduct this study. The result of analysis has been properly tabulated, compared, analyzed and interpreted. In this study, the following statistical tools are used to analyze the relationship between dividend and other variables.

I. Arithmetic Mean or Average ($\overline{X}$):

An average is the value, which represents a group of values. It depicts the characteristic of the whole group. It is an envoy of the entire mass of homogeneous data. Generally, the average value lies somewhere in between the two extremes, i.e. the largest and the smallest items. It is also known as simple average (Sharma, 2001).

In general, $X_1, X_2, X_3, \ldots\ldots\ldots\ldots X_n$ are the given "n" observations? Then their arithmetic mean, usually denoted by $\overline{X}$ is given by:

$$\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots + X_n}{n}$$

Or, $X = \frac{X}{n}$

Where, X =Sum of the sizes of the items

n=Number of items.

II. Standard Deviation($\pm$):

The measurement of the scatter needs of the mass of figures in a series about an average is known as dispersion. The standard deviation measures the absolute dispersion of a distribution. The greater the amount of dispersion, the greater the standard deviation will be, i.e. greater will be the magnitude of the deviations of the values from their mean. A small standard deviation means a high degree of uniformity of the observation as well as homogeneity of a series; a large standard deviation

means just opposite. Standard deviation is denoted by a Greek letter ‘ ± ” (Sigma) and is calculated as follows (Sharma, 2001):

$$\text{S.D. } (\pm) = \frac{\sqrt{\quad (X \; \mathrm{Z} \; \bar{X})}}{n}$$

Where,

$\bar{X}$ =Mean

X= Variable

n= Number of items in the series

III. Coefficient of Variation(CV)

The coefficient of variation reflects the relationship between standard deviation and mean. It is the relative measure of dispersion, comparable across, which is defined as the ratios of the standard deviation to the mean expressed in percent (Levin, Richard I. and Rubin, David S.: 1994,p.144).The series with higher coefficient of variation is said to be more variable, less consistent, less stable and less homogenous. On the contrary, the series with less coefficient of variation is said to be less variable, more consistent, more uniform, and more stable and more homogenous. It is denoted by C.V. and is obtained by dividing the standard deviation by arithmetic mean. Thus, in symbol (Sharma, 2001)

$$\text{Coefficient of Variation (C.V)} = \frac{S.D \mid 100}{Mean} = \frac{\pm \mid 100}{\bar{X}}$$

Where,

S.D or± =Standard Deviation

$\bar{X}$ =Mean

IV. Coefficient of Correlation (r)

The correlation analysis is the technique used to measure the closeness of the relationship between the variables. Correlation is an analysis of the covariance between two or more variables and correlation analysis deals to determine the degree of relationship between variables (Pant and Choudhary; 2053:299). It is a tool that can

be used to describe the degree to which one variable is linearly related to another. It describes not only the magnitude of correlation, but also its direction. The coefficient of correlation is a number, which indicated to what extent two variables are related with each other and to what extent variations in one leads to the variations in the other.

The value of coefficient of correlation always lies between ｛1. A value of -1 indicates a perfect negative relationship between the variables and a value of +1 indicates a perfect positive relationship. A value of zero indicates that there is no relation between the variables. The zero correlation coefficient means the variables are uncorrelated. The closer r is to +1 or -1, the closer the relationship between the variables and closer r is to zero(0), the less close relationship. The algebraic sign of the correlation coefficient indicates the direction of the relationship between two variables, whether direct or inverse, while the numerical value of the coefficient is concerned with the strength, or closeness of the relationship between two variables.

Thus, in this study, the degree of relationship between market price and other relevant financial indicators such as dividend per share, earning per share, dividend payout ratio etc. is measured by the correlation coefficient. The correlation coefficient can be calculated as (Sharma, 2001):

$$r=\frac{Cov(X,Y)}{\pm_x \pm_y}$$

$$r=\frac{(X - \bar{X})(Y - \bar{Y})}{(N - 1)\pm_x \pm_y}$$

$$r=\frac{N \quad XY - \quad X \quad Y}{\sqrt{N \quad X^2 - (\quad X)^2}\sqrt{N \quad Y^2 - (\quad Y)^2}}$$

Where,

$\pm_x, \pm_y$ are the standard deviation or the distributions of X and Y values respectively.

Cov(X, Y) = Covariance of X, Y value

$$= \frac{(X - \bar{X})(Y - \bar{Y})}{(N - 1)}$$

V. Coefficient of Determination(R^2):

The coefficient of determination is the primary way to measure the extent, or strength of the association that exists between two variables, X and Y. It refers to a measure of the total variance in a dependent variable that is explained by its linear relationship to an independent variable. The coefficient of determination is denoted by R_2 and the value lies between zero and unity. The closer the R^2 to unity, the greater the explanatory power. A value of one can occur only if the unexplained variation is zero, which simply means that all the data points in the scatter diagram fall exactly on the regression line. The R^2 is always a positive number. It can't tell whether the relationship between the two variables is positive or negative. The R^2 is defined as the ratio of explained variance to the total variance (Sharma, 2001). Thus,

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

$$R^2 = 1 - \frac{Unexplained Variance}{Total Variance}$$

VI. Regression Analysis

The Regression refers to an analysis or a statistical method for determining relationships between the variables by the establishment of an approximate functional relationship between them. It is a statistical device used to estimate or predict the variable or interest from the known values of other variable. In the words of Johnson and Siskin, "The technique of regression analysis is used to determine the statistical relationship between two (or more) variables and to make prediction of one variable on the basis or the other(s). It is considered as a useful tool for determining the strength of relationship between two (Simple Regression) or more (Multiple Regression) variables. It is also used to predict value of one variable from the given value of other variable(s).

Simple linear analysis is used to find the relationship between two variables. In this study, the following simple regressions have been analyzed:

a. Market Price per share on Earning per Share

Y=a +bX

Where, Y=Market Price per Share

a=Regression Constants

b=Regression coefficient

x=Earning per share

This model has been constructed to examine the relationship between market price per share (dependent variable) and Earning per share (independent variable).

b. Market Price per Share on Dividend per Share

Y = a + bX

Where, Y = Market Price per Share

a=Regression Constant

b=Regression Coefficient

X=Dividend per Share

This model has been constructed to examine the relationship between market price per share (dependent variable) and dividend per share (independent variable).

c. Market Price per Share on Dividend Percent

Y=a +bX

Where, Y=Market Price per Share

a=Regression Constant

b=Regression Coefficient

X=Dividend Percent

This model has been constructed to examine the relationship between market price per share (dependent variable) and dividend percent (independent variable).

d. Market Price per Share on Dividend Payout Ratio

Y=a +bX

Where, Y=Market Price per Share

a=Regression Constant

b=Regression Coefficient

X=Dividend Payout Ratio

This model has been constructed to examine the relationship between market price per share (dependent variable) and Dividend payout Ratio (independent variable).

e. Market Price per share on Dividend Yield

Y=a + bX

Where, Y=Market Price per Share

a=Regression Constant

b=Regression Coefficient

X=Dividend Yield

This model has been constructed to examine the relationship between market price per share (dependent variable) and dividend yield (independent variable).

In order to obtain the value of 'a' and 'b', we have the following two normal equations:

$$Y \text{ X} na \Gamma bX$$

$$XY \text{ X} a \quad X \Gamma b \quad X^2$$

Where,

a=Regression Constant

b=Regression Coefficient

n=Number of observation in the sample.

Regression Constant (a)

The regression constant (a) which is the intercept of the model, represents the average level of dependent variable when independent variable has a value of zero. In other words, it indicated the mean or average effect on dependent variable if all the variables omitted from the mode. This term has practical meaning only if a zero value for the independent variable is possible.

Regression Coefficient (b)

The regression coefficient (b) is a parameter which indicates the marginal relationship between independent variable and value of dependent variable holding constant the effect of all other independent variables in the regression model. The coefficient specifies a part of change in the dependent variable regarding part of change in the independent variables.

Probable error P.E(r)

Probable error of the correlation coefficient denoted by P.E(r) is the measure of testing the reliability of the calculated value of 'r'.

1. If r<P.E(r), it is insignificant. So, perhaps there is no evidence of correlation.
2. If r<P.E. (r), it is significant. The P.E. (r) of correlation coefficients may be used to determine the limits within the population correlation lies. Limits for population correlation coefficient are r⦃ P.E(r).

CHAPTER-IV
DATA PRESENTATION AND ANALYSIS

In this chapter, the relevant and the available data/information regarding dividend policy of the sample Commercial Banks have been presented and analyzed according to the research methodology as mentioned in the previous chapter.

4.1 Analysis of Financial Indicators

Earning per share, dividend per share, market price per share and dividend payout ratio are some of the most important financial indicators of a firm. Detailed analysis of these financial indicators along with their mean, standard deviation and coefficient of variation is presented below with the help of the results obtained in appendix 1.

4.1.1 Earning Per Share (EPS)

Earning per Share (EPS) is one of the most important financial indicators, which measures the earning capacity of a firm. It measures the profitableness of the shareholders investment on a per share basis. It is computed by dividing net profit after taxes by the total number of common stocks outstanding. Table 1 in next page shows the EPS of the sample firms.

Table 4.1

Analysis of EPS

Earning Per Share					
Year	HBL	NIBL	NABIL	SCBNL	Pooled average
2004/05	86.07	33.75	67.84	105.86	73.38
2005/06	83.08	53.68	83.79	115.62	84.04
2006/07	93.56	33.17	59.26	126.88	78.22
2007/08	60.26	33.59	55.25	141.13	72.56
2008/09	49.45	39.56	84.66	149.30	80.74
2009/10	49.05	51.70	92.61	143.55	84.23
2010/11	47.91	39.31	103.45	143.55	83.56
2011/12	59.24	59.35	129.21	143.55	97.84
Mean	66.08	43.01	84.51	133.68	81.82
S.D	17.39	9.70	22.89	14.73	7.42
C.V	26.31	22.55	27.08	11.01	9.06

Source: www.nepalstock.com

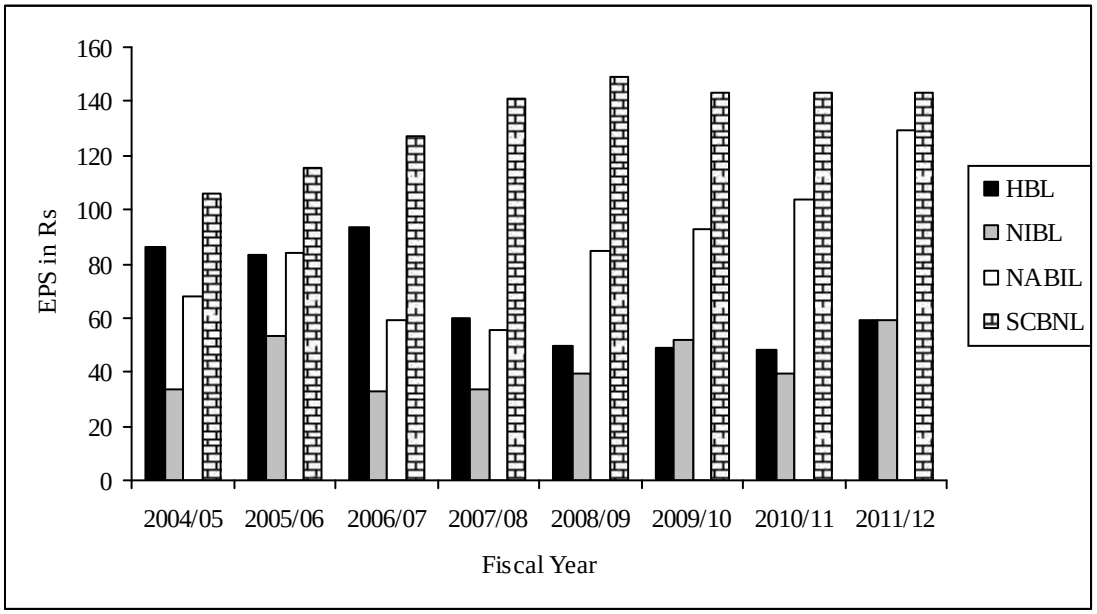
That comparative table has shown the earning per share of four commercial banks with their pooled average as well as the standard deviation and coefficient of variation of the EPS covering the period from fiscal Year 2004/05 to 2011/12. Here, SCBL, has the highest EPS throughout the study period where as NIBL has the lowest EPS during the same periods.

Comparatively, the earning position of NABIL is better than that of NIBL, but it is above the average EPS of commercial banks throughout the period and so we can say that the earning capacity of NIBL is at the satisfactory level.

HBL's EPS for the first years are above the pooled average EPS but rest of the year from 2005/06 to 2011/12, it has been come down significantly. NABIL EPS during 2008/09 to 2011/12 are greater than pooled average. Its EPS is growing. SCBNL is the most successful bank whose average EPS is greater than the average pooled EPS.

Figure 4.1

Analysis of EPS



Source: Table No. 4.1

4.1.2 Dividend Per Share (DPS)

Dividend per Share (DPS) is another important financial indicator, which measures the dividend distributed to each equity shareholders. It is calculated by dividing the total dividend distributed to equity shareholders by the total number of equity

shareholders outstanding. The following table shows the DPS of the sample banks over the observed period.

Table 4.2

Analysis of DPS

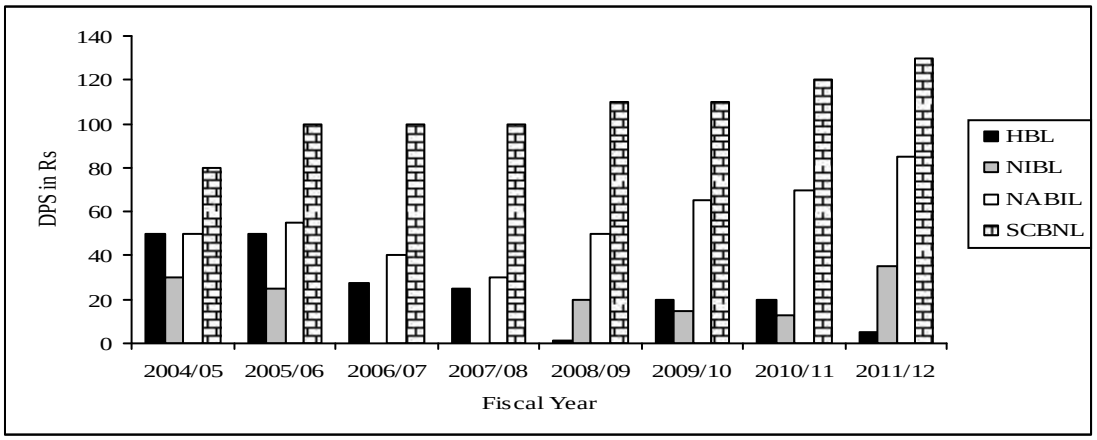
Dividend Per Share					
Year	HBL	NIBL	NABIL	SCBNL	Pooled average
2004/05	50.00	30.00	50.00	80.00	52.50
2005/06	50.00	25.00	55.00	100	57.50
2006/07	27.50	0.00	40.00	100	41.875
2007/08	25.00	0.00	30.00	100	38.75
2008/09	1.32	20.00	50.00	110	45.33
2009/10	20.00	15.00	65.00	110	52.50
2010/11	20.00	12.50	70.00	120	55.62
2011/12	5.00	35.00	85.00	130	63.75
Mean	24.85	17.18	55.62	106.25	50.97
S.D.	16.83	8.45	16.28	14.08	7.87
C.V	67.73	49.41	29.27	13.25	15.45

Source: www.nepalstock.com

The above table 2 shows the dividend per share of the commercial banks with their pooled average DPS as well as the standard deviation and coefficient of variation of the DPS of those banks over the period from fiscal year 2004/05 to 2011/12. Here, average pooled DPS over the period is 50.97 where as the average DPS over the period of SCBL alone is Rs 106.25 Which is more than two and half times greater than the pooled average DPS. So, SCBNL is the best bank among the selected ones. NABIL also can be taken as in the satisfactory level as it has kept itself above the pooled average during the period except in 2007/008 though the DPS of NIBL are below the pooled average through out the observed periods. The DPS of HBL is slightly better than NIBL. The DPS of HBL for first two years is above the pooled average but it is too much decrease in 2008/09 up to 1.32.The DPS of NIBL in 2006/07 to 2007/08 is ‘Zero’. The comparative DPS of selected banks can be presented with the help of following diagram.

Figure 4.2

Analysis of DPS



Source: Table No. 4.2

4.1.3 Dividend Payout Ratio

Dividend payout ratio (DPR) is the proportion of earning paid in the form of dividend. This ratio shows what percentage of profit is distributed as dividend and what percentage is retained as reserve and surplus for the growth of the companies. It is calculated by dividing DPS by EPS. The following table shows the DPR of the sample banks

Table 3

Analysis of DPR

	Dividend Payout %				
Year	HBL	NIBL	NABIL	SCBNL	Pooled average
2004/05	58.09	88.90	73.70	75.57	74.065
2005/06	60.19	46.57	65.64	86.49	64.723
2006/07	29.39	0.00	67.49	78.81	43.923
2007/08	41.49	0.00	54.30	70.86	41.663
2008/09	2.66	50.56	59.06	73.68	46.49
2009/10	40.77	29.01	70.19	76.63	43.958
2010/11	41.74	31.79	67.66	83.59	56.190
2011/12	8.44	58.97	65.78	90.56	55.93
Mean	35.34	38.22	65.47	79.52	54.63
S.D.	19.59	27.99	5.73	6.33	10.87
C.V.	55.43	73.23	8.75	7.56	19.89

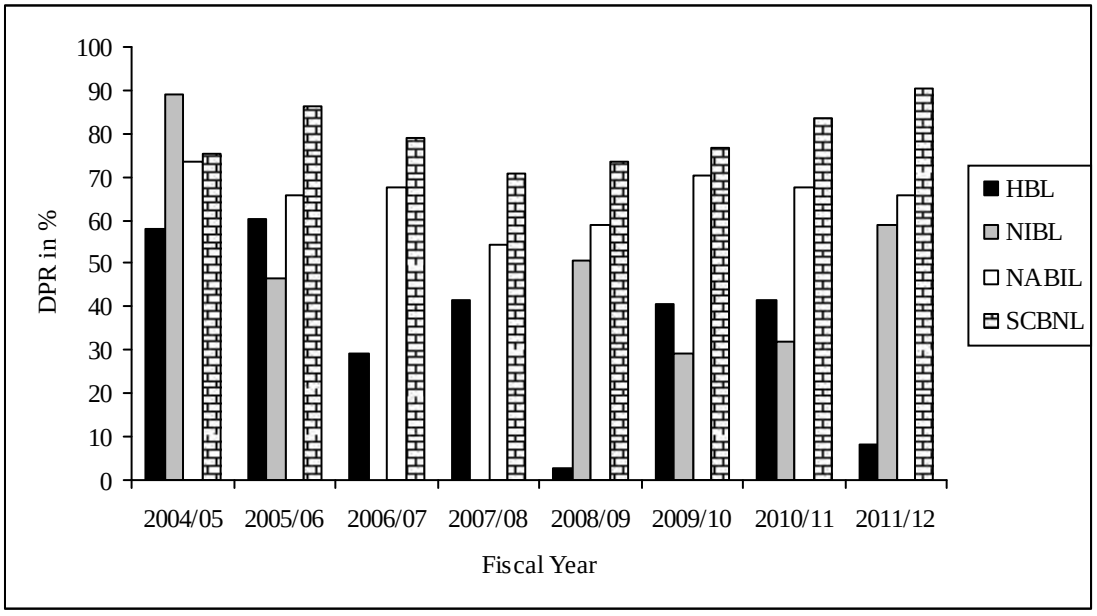
Source:www.nepalstock.com

The above table shows the comparative DPR of the four commercial banks for eight years period with their pooled average for each year as well as the standard deviation and coefficient of variation for corresponding DPR series. As seen in the table, DPR of all the banks is fluctuating from year to year. NIBL has maintained the highest payout ratio in the first year 2004/05, but thereafter SCBNL has taken that position continuously through out the remaining period from 2005/06 to 2011/12. NABIL has got success to keep itself above the pooled average through out the observed periods .DPR of HBL is gone down to 2.66%in 2008/09 and 8.44% in 2011/12. And NIBL has been gone down to zero for 2006/07 & 2007/08. These are the banks having most fluctuation DPR.

Generally, we divide payout ratio in three categories as Conservative (0-20%), Moderate (21-50%) and Aggressive (51-100%).If we analyze above data using this criteria, SCBNL and NABIL have aggressive dividend policy through out the study Period. HBL has adopted aggressive policy in 2004/05, 2005/06 but moderate policy in 2006/07, 2007/08, 2009/10, 2010/11 conservative policy in 2008/09. NIBL has adopt aggressive in 2004/05, 2011/12 but moderate in 2005/06, 2008/09, 2009/10, 2010/11 and conservative in 2006/07, 2007/08. These DPR is clear from the following diagram:

Figure 4.3

Analysis of DPR



Source: Table No. 4.3

4.1.4 Market Price per Share (MPS)

MPS is that value of stock which can be obtained by a firm from the sale of a share in the market. The capital market determines MPS. The following table shows the market price of the sample firms as indicated in NEPSE index.

Table 4.4

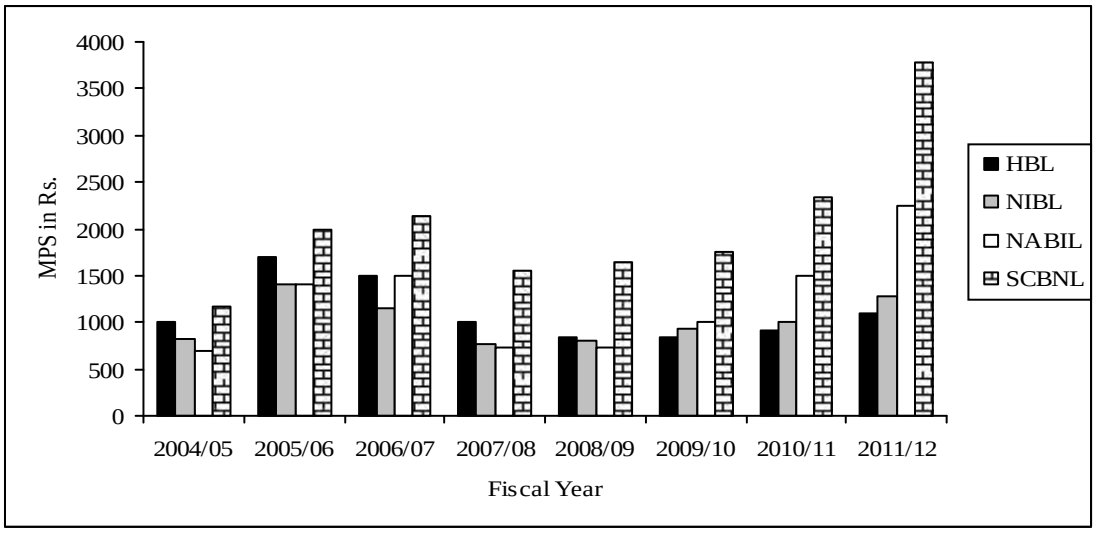
Analysis of MPS

Market Price Per Share					
Year	HBL	NIBL	NABIL	SCBNL	Pooled Average
2004/05	1000.00	822.00	700.00	1162.00	921.00
2005/06	1700.00	1401.00	1400.00	1985.00	1621.5
2006/07	1500.00	1150.00	1500.00	2144.00	1573.5
2007/08	1000.00	760.00	735.00	1550.00	1011.25
2008/09	836.00	795.00	735.00	1640.00	1001.25
2009/10	840.00	940.00	1000.00	1745.00	1131.25
2010/11	920.00	1000.00	1505.00	2345.00	1442.5
2011/12	1100	1280.00	2240.00	3775.00	2098.5
Mean	1112	1018.50	1226.87	2043.25	1350.15
S.D	297.60	221.88	502.65	739.51	380.97
C.V	26.76	21.78	40.97	36.19	28.17

The above table 4 shows the market price per share of the commercial banks with their pooled average MPS as well as the standard deviation and coefficient of variation of the MPS of those banks over the period from 2004/05 to 2011/12. Here, average pooled MPS over the period is Rs 1350.15 where as SCBNL alone is Rs. 2043.25 which is very greater than the average pooled MPS. So, SCBNL is the most appreciable bank among the selected ones .NABIL can also be taken as some how good level as its average MPS is close to the pooled average MPS. The average MPS of NIBL and HBL are below the pooled average MPS.NIBL average MPS is less than that of HBL. We can present this difference in the following bar diagram as in figure 4.

Figure 4.4

Analysis of MPS



Source: Table No. 4.4

4.1.5 Dividend Yields (DY)

Dividend Yield measures the dividend in relation to market value of share. It is the dividend received by the investors as a percentage of market prices per share in the stock market. The following table 5 shows the DY of the observed banks.

Table 4.5

Analysis of DY

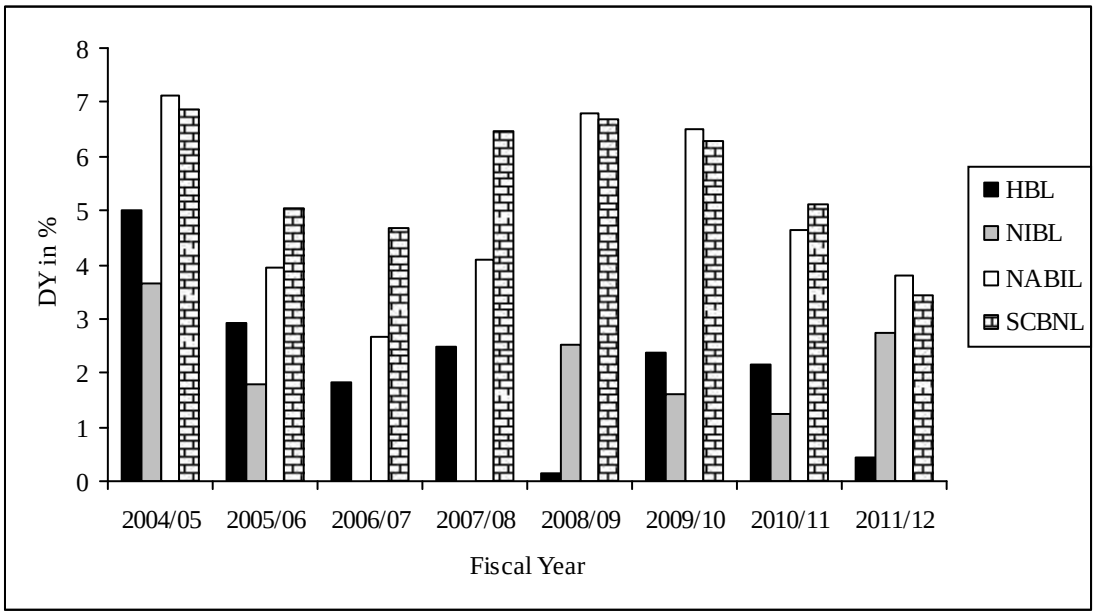
Dividend Yield (%)					
Year	HBL	NIBL	NABIL	SCBNL	Pooled average
2004/05	5.00	3.65	7.14	6.88	5.66
2005/06	2.94	1.78	3.93	5.04	3.42
2006/07	1.83	0.00	2.67	4.66	2.29
2007/08	2.50	0.00	4.08	6.45	3.25
2008/09	0.16	2.52	6.80	6.70	4.04
2009/10	2.38	1.60	6.50	6.30	4.19
2010/11	2.17	1.25	4.65	5.11	3.29
2011/12	0.45	2.73	3.79	3.44	2.60
Mean	2.17	1.69	4.94	5.57	3.59
S.D	1.40	0.85	1.75	1.12	0.98
C.V	64.57	50.33	35.46	20.10	27.38

Source:www.nepalstock.com

The above table 4.5 shows the dividend yield of the selected commercial banks with their pooled average dividend yield as well as the standard deviation and the coefficient of variation of the DY over the period from fiscal year 2004/05 to 2011/12. The pooled average dividend yield is 3.59% where as the same of SCBNL is 5.57%, which is almost two times greater than pooled average DY. So; SCBNL is the most appreciable bank among the selected ones. NABIL also can be taken as in the satisfactory level as its average DY is above the pooled average DY during the observed period. Though the dividend yield of HBL was above the pooled average in the first year and decreased in the following year. It has been unexpectedly decreased in 2008/09 and 2011/12, which might have given negative message in the share market. NIBL DY is below the pooled average dividend yield through out the observed periods. Its dividend yield for 2006/07 and 2007/08 has been gone down to zero. The comparative DY is clearly presented in the following bar diagram as in figure 6.

Figure 4.6

Analysis of DY



Source: Table No. 4.5

4.2 Analysis of Statistical Indicators

4.2.1 Simple Correlation and Regression Analysis

1. Simple Correlation and regression Analysis between EPS and DPS

Table 6

Simple Correlation and Regression Analysis between EPS and DPS

Banks	Regression Model	a	b	SEe	r	R^2	S.E(r)	P.E(r)	Sig/insig
HBL	y= a + bx	-2.149	0.70	19.56	0.59	0.348	0.23	0.155	insig
NIBL		-11.30	0.674	11.48	0.568	0.323	0.23	0.155	insig
NABIL		-2.68	0.69	4.4517	0.97	0.94	0.0208	0.01406	sig
SCBNL		5.99	0.75	10.07	0.78	0.61	0.13	0.087	sig
Pooled average		-21.76	0.888	5.7146	0.8176	0.6685	0.1176	0.079	sig

The above table 6 has contained the different indicator (see appendix2) helpful to analyze the simple correlation and regression between EPS and DPS of the observed four commercial banks along with their Pooled Average. Where EPS is independent Variable and DPS is the dependent variable with the help of these indicators. We can come to the following conclusion.

HBL

The regression constant or intercept coefficient (a) is -22.149 which shows that the average DPS would be RS -22.149 if the EPS were zero. The result shows that the slope of regression line (b) is 0.70 which indicates that positive correlation exist between EPS and DPS of HBL .One rupee increase in EPS cause Rs 0.70 increase in the dividend per share distributed by the bank. The coefficient of determination (r_2) is 0.348 which indicates that only 34.8% of the variation in DPS is affected or determined by the explanatory variables EPS. The simple correlation coefficient (r) between EPS and DPS is 0.59 which indicates that there is a moderate positive

relationship between EPS and DPS of HBL. Since 'r' is less than 6*P.E(r) =6*0.155=0.93 we can say the correlation is not significant.

NIBL

The regression constant or intercept coefficient (a) is -11.30 which shows that the average DPS would be -11.30 if the EPS were zero. The result shows that the slope of the regression line (b) is 0.674 which indicates that positive correlation exists between EPS and DPS of NIBL. One rupee increase in EPS causes Rs 0.674 increase in the dividend per share distributed by the bank. The coefficient of determination (r^2) is 0.323 which indicates that only 32.30% of the variation in DPS is affected or determined by the explanatory variables EPS. The simple correlation coefficient (r) between EPS and DPS is 0.568, which indicates that there is a moderate positive relationship between EPS and DPS of NIBL. Since 'r' is less than 6*P.E=6*0.155=0.93, we can say the correlation is not significant.

NABIL

The regression constant or intercept coefficient (a) -2.68, which shows that the average DPS would be Rs -2.68 if the EPS were zero. The result shows that the slop of the regression line (b) is 0.69, which indicates that positive correlation exists between EPS and DPS of NABIL Bank. One rupee increase in EPS causes Rs 0.69 increase in the dividend per share distributed by the bank. The coefficient of determination (r_2) is 0.94, which indicates that 94% of the variation in DPS is affected of determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and DPS is 0.97 which indicates that there is a strong positive relationship between EPS and DPS of NABIL Bank. Here, 'r' is greater than 6*P.E(r) =6*0.01406=0.084. The value of 'r' is considered to be significant.

SCBNL

The regression constant or intercept coefficient (a) is 5.99 which show that the average DPS would be Rs 5.99 if the EPS were zero. The result shows that the slope of the regression line (b) is 0.75, which indicates that positive correlation exit between EPS and DPS of SCBNL. One rupee increase in EPS causes Rs 0.75 increase in the dividend per share distributed by the bank. The coefficient of determination (r_2) is 0.61, which indicates that 61% of the variation in DPS is affected or determined by

the explanatory variables EPS. The simple correlation coefficient (r) between EPS and DPS is 0.75, which indicates that there is a strong positive relationship between EPS and DPS of SCBNL. Here, since 'r' is greater than 6*P.E=6*0.087=0.522, the value of 'r' is considered to be significant.

Pooled average

The regression constant or intercept coefficient (a) is -21.763, which show that the average DPS would be Rs -21.763 if the EPS were zero. The result shows that the slope of the regression line (b) is 0.888, which indicates that positive correlation exists between EPS and DPS of the observed banks in average. One rupee increase in EPS causes Rs 0.888 increase in the dividend per share distributed by the observed banks. The coefficient of determination (r_2) is 0.6685, which indicates that 66.85% of the variation in DPS is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and DPS is 0.8176, which indicates that there is a strong positive relationship between EPS and DPS of observed banks in average. But, since 'r' is more than 6*P.E(r) =6*0.079=0.474 we can say the correlation is significant.

II Simple correlation and Regression Analysis between EPS and MPS:

Table 7

Simple Correlation and Regression Analysis between EPS and MPS

Banks	Regression Model	a	b	SEe	r	R_2	S.E.(r)	P.E(r)	Signi/ insigni
HBL	Y=a +b.X	242.3804	13.1607	219.5198	0.769	0.5913	0.144	0.0971	signi
NIBL		363.4120	15.23	191.07	0.666	0.4435	0.1967	0.1327	Insig
NABIL		-78.4691	15.44	412.117	0.7037	0.495	0.1784	0.1203	Insig
SCBNL		-420.766	18.432	794.19	0.367	0.1349	0.3058	0.2062	insig
Pooled average		-2089.838	42.043	251.739	0.8198	0.6720	0.0637	0.0429	signi

The above table 7 has contained the different indicator (see appendix 3) helpful to analyze the simple correlation and regression between EPS and MPS of the observed four commercial banks along with their pooled average. Where EPS is independent variable and MPS is dependent variable with the help of these indicators. We came to the following conclusion.

HBL

The regression constant or intercept coefficient (a) is 242.3804, which shows that the average MPS would be Rs 242.3804 if EPS were zero. The result shows that the slope of the regression line (b) is 13.1607 which indicates that positive correlation exists between EPS and MPS of HBL. One rupee increase in the EPS causes Rs 13.1607 increase in the market price of stock of the bank. The coefficient of determination r_2 is 0.5913, which indicates that 59.13% of the variation of stock price is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.769, which indicates that there is a strong positive relationship between EPS and MPS of HBL. But, since 'r' is more than 6* P.E = 6*0.0971 = 0.5826, we say that the correlation is significant.

NIBL

The regression constant or intercept coefficient (a) is 363.4120, which shows that the average MPS would be Rs 363.4120 if EPS were zero. The result shows that the slope of the regression line (b) is 15.23, which indicates that the positive correlation exists between EPS and MPS of NIBL. One rupee increase in EPS causes Rs 15.23 increase in market price of stock of the bank. The coefficient of determination r_2 is 0.4435 which indicates that 44.35% of the variation of stock price is affected or determined by the explanatory variables EPS. The simple correlation coefficient (r) between EPS and MPS is 0.666, which indicates that there is a strong positive relationship between EPS and MPS of NIBL, since 'r' is less than 6*P.E(r) = 6*0.1327 = 0.7962, we can say the correlation is not significant.

NABIL

The regression constant or intercept coefficient (a) is -78.469, which shows that the average MPS would be Rs -78.469 if EPS were zero. The result shows that the slope of the regression line (b) is 15.44, which indicates that positive correlation exists between EPS and MPS of NABIL Bank. One rupee increase in EPS causes Rs 15.44 increase in the market price of stock of the bank. The coefficient of determination (r_2) is 0.495, which indicates that only 49.5% of the variation of the stock price is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.7037, which indicates that there is positive relationship between EPS and MPS of NABIL Bank, since 'r' is less than 6*P.E (r)= 6*0.1203 = 0.7218, we can say the correlation is not significant.

SCBNL

The regression constant or intercept coefficient (a) is -420.766 which shows that the average MPS would be Rs -420.766 if the EPS were zero. The result shows that the slope of the regression line (b) is 18.432, which indicates that positive correlation exists between EPS and MPS of SCBNL. One rupee increase in EPS causes Rs 18.432 increase in the market price of stock of the bank. The coefficient of determination (r_2) is 0.1349, which indicates that 13.49% of the variation of stock price is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.367, which indicates that there is a poor positive relationship between EPS and MPS of SCBNL. But 'r' is less than its 6*P.E(r) =6*0.2062 = 1.2372, the value of 'r' is not significant.

Pooled Average

The regression constant or intercept coefficient (a) is -2089.838 which shows that the average MPS would be Rs -2086.838. if the EPS were zero. The result shows that the slope of the regression line (b) is 42.043, which indicates that positive correlation exists between EPS and MPS of the observed banks. The correlation coefficient of determination (r_2) is 0.6720, which indicates that 67.20% of the variation of stock

price is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.8198, which indicates that there is a positive relationship between EPS and MPS of observed banks in average. But since 'r' is more than 6 *P.E(r) =6*0.0429=0.257, we can say with certainty the correlation is significant

III. Simple Correlation and Regression Analysis between DPS and MPS:

Table 8

Simple Correlation and Regression Analysis between DPS and MPS

Banks	Regression Model	a	b	SEe	r	R_2	S.E(r)	P.E(r)	Sig/ insig
HBL	Y=a +b.X	871.203	9.690	287.36	0.5481	0.3004	0.2473	0.1668	insig
NIBL		916.35	5.943	242.43	0.3236	0.104	0.316	0.213	insig
NABIL		32.71	21.468	416.859	0.696	0.4846	0.1074	0.072	sig
SCBNL		-2547.9	43.211	484.967	0.823	0.677	0.114	0.077	insig
Pooled average		1173.55	0.627	665.521	0.38	0.144	0.302	0.203	insig

The above table 8 has contained the different indicators (see Appendix 4) helpful to analyze the simple correlation and regression between DPS and MPS of the observed four commercial banks along with their pooled average, where DPS is independent variable and MPS is the dependent variable. With the help of these indicators, we can come to the following conclusions:

HBL

The regression constant or intercept coefficient (a) is 871.203, which shows that the average MPS would be 871.20., if the DPS were zero. The result shows that the slope of the regression line (b) is 9.690, which indicates that positive correlation exists between DPS and MPS of HBL. One rupee increase in DPS causes Rs 9.690 increase in the market price of stock of the bank. The coefficient of determination $r_2$is 0.3004

which indicates that 30.04% of the variation of stock price is affected or determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and MPS is 0.5481 which indicates that there is a moderate positive relationship between DPS and MPS of HBL. But since 'r' is less than 6*P.E(r)= 6*0.1668 = 1.0008, we can say the correlation is not significant.

NIBL

The regression constant or intercept coefficient (a) is 916.35 which show that the average MPS would be Rs 916.35 if the DPS were zero. The result shows that the slope of the regression line (b) is 5.943, which indicates that positive correlation exists between DPS and MPS of NIBL. One rupee increase in DPS cause Rs 5.943 in market price of stock of the bank. The coefficient of determination (r_2) 0.014, which indicates that only 10.40% of the variation of stock price is affected or determined by the explanatory variable DPS. The simple correlation (r) between DPS and MPS is 0.3236, which indicates that there is a poor positive relation between DPS and MPS of NIBL. But, since 'r' is less than 6*P.E(r) = 6*0.213=1.278, the value of 'r' is not significant.

NABIL

The regression constant or intercept coefficient (a) is 32.71, which shows that the average MPS would be Rs 32.71 if the DPS were zero. The result shows that the slope of the regression line (b) is 21.468, which indicates that positive correlation exists between DPS and MPS of NABIL Bank. One rupee increase in DPS causes Rs 21.468 increase in the market price of stock of the bank. The coefficient of determination r_2 is 0.4846 which indicates that only 48.46% of the affected or determined by the explanatory variable DPS. The simple correlation coefficient (r) between DPS and MPS is 0.696 which indicates that there is a positive relationship between DPS and MPS of NABIL Bank. Since 'r' is greater than 6*P.E =6*0.072 = 0.432. The value of 'r' is significant.

SCBNL

The regression constant or intercept coefficient (a) is -2547.93 which shows that the average MPS would be Rs -2547.93 if the DPS were zero. The result shows that the slope of the regression line (b) is 43.211, which indicates that positive correlation exists between DPS and MPS of SCBNL. One rupee increase in DPS causes Rs 43.211 increase in the market price of stock of the bank. The coefficient of determination (r_2) is 0.677, which indicates that 67.7% of the variation of stock price is affected or determined by the explanatory variable DPS. The simple correlation coefficient (r) between DPS and MPS is 0.823, which indicates that there is a strong positive relationship DPS and MPS of SCBNL. But 'r' is more than 6*P.E(r) = 6*0.077 = 0.462, the value of 'r' is significant.

Pooled Average

The regression constant or intercept coefficient (a) is 1173.55 which show that the average MPS would be Rs 1173.55 if the DPS were zero. The result shows that the slope of regression line (b) is 0.627, which indicate that positive correlation exists between DPS and MPS of pooled average. One rupee increase in DPS cause Rs 0.627 increase in the market price of stock of the observed banks. The coefficient of determination r_2 is 0.144, which indicate that only 14.4% of the variation of stock price is affected or determined by the explanatory variable DPS. The simple correlation coefficient (r) between DPS and MPS 0.38, which indicates that there is a poor positive relationship between DPS and MPS of observed banks in average. But, since 'r' is less than 6*P.E(r) =6*0.203=1.218. We can say the correlation is not significant.

IV. Simple Correlation and Regression Analysis between DPR and MPS

Table 9

Simple Correlation and Regression Analysis between DPR and MPS

Banks	Regression Model	a	b	SEe	r	R_2	SE(r)	P.E(r)	Sig/ insig
HBL	Y= a + bx	1574.99	-14.12	226.47	-0.753	0.567	0.153	0.103	sig
NIBL		1008.75	0.255	256.087	0.033	0.00108	256.087	0.238	Insig
NABIL		54.3023	17.91	168.85	0.57	0.32	0.24	0.16188	insig
SCBNL		2035.61	0.096	853.64	0.823	0.677	853.64	0.0768	Sig
Pooled		1196.18	2.885	438.38	0.0818	0.0066	0.3512	0.2368	insig

The above table 9 has contained the different indicators (see appendix5) helpful to analyze the simple correlation and regression between DPR and MPS of the observed 4 commercial banks along with their pooled average, where DPR is independent variable and MPS is the dependent variables. With the help of these indicators, we can come to the following conclusions:

HBL

The regression constant or intercept coefficient (a) is 1574.99, which shows that the average MPS would be Rs 1574.99 if the DPR were zero. The result shows that the slope of the regression line (b) is -14.12 which indicates that there is negative correlation exit between DPR and MPS of HBL. One percent increase in DPR causes Rs 14.12 decrease in the market price of stock of the bank. The coefficient of determination r_2 is 0.567, which indicates that 56.7% of stock price is affected or determined by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is -0.753, which indicates that there is a strong negative relationship between DPR and MPS of HBL. But since 'r' is greater than 6* P.E(r) =6*0.103=0.618, the value of 'r' is significant.

NIBL

The regression constant or intercept coefficient (a) is 1008.75 which show that the average MPS would be Rs 1008.75 if the DPR were zero. The result shows that the slope of regression line (b) is 0.255 which indicate that there is positive correlation exists between MPS and DPR of NIBL. One percent increases in DPR causes Rs 0.255 increase in the market price of the stock of bank. The coefficient of determination (r_2) is 0.001080 which indicates that only .1080% of the variation of stock price is affected or determined by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.033, which indicates that there is a poor positive relationship between DPR and MPS of NIBL. But since 'r' is less than 6*P.E(r) =6*0.238=1.428, the value of 'r' is not significant.

NABIL

The regression constant or intercept coefficient (a) is 54.3023, which shows that the average MPS would be Rs 54.3023 if the DPR were zero. The result shows that the slope of the regression line (b) is 17.91 which indicate that positive correlation exists between DPR and MPS of NABIL. One percent increase in DPR causes Rs 17.19 increase in the market price of the stock of the bank. The coefficient of determination (r_2) is 0.321 which indicates that 32% of the variation of the stock price is affected or determined by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.57, which indicates that positive relationship between DPR and MPS of NABIL. But, since 'r' is less than 6*P.E(r) =6*0.16188 =0.97128. We can say the correlation is not significant.

SCBNL

The regression constant or intercept (a) is 2035.61, which shows that the average MPS would be Rs 2035.61 if the DPR were zero. The result shows that the slope of the regression line (b) is 0.096, which indicates that positive correlation exists between DPR and MPS of SCNBL. One rupee increase in DPR causes Rs 0.096 increases in the market price of stock of the bank, the coefficient of determination r_2 is 0.677, which indicates that 67.7% of the variation of stock price is affected or determined by the explanatory variable DPR. The simple correlation coefficient (r)

between DPR and MPS is 0.823, which indicates that there is strong positive relationship between DPS and MPS of SCBNL. But since 'r' is greater than 6* P.E(r)=6*0.0768=0.4608. The value of 'r' is significant.

Pooled Average

The regression constant or intercept coefficient (a) 1196.18, which shows that the average MPS would be Rs 1196.18 if the DPR were zero. The result shows that the slope of the regression line (b) is 2.885, which indicate that the positive correlation exists between DPR and MPS of the observed banks in average. One percent increase in DPR causes Rs 2.885 increase in the market price of stock of the observed banks. The coefficient of determination r_2 is 0.0066, which indicates that only 0.66% of the variation of stock price is affected or determined by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.0818 which indicates that there is poor relationship between DPR and MPS of observed banks in average. But 'r' is less than 6*P.E=6*0.2368=1.4208, we can say the correlation is not significant.

V. The simple correlation and Regression Analysis between DY and MPS:

Table 10

The Simple Correlation and Regression Analysis between DY and MPS

Banks	Regression Model	a	b	SEe	r	R^2	SE(r)	P.E(r)	Sig/ insg
HBL	Y=a+bx	364.30	344.56	292.8432	0.1447	0.0209	0.346	0.233	insg
NIBL		1058.88	-2.985	132.8094	-0.0161	0.00026	0.353	0.2309	insg
NABIL		2276.88	-212.338	440.140	-0.65	0.4225	0.204	0.1375	insg
SCBNL		5417.17	-605.46	329.4866	-0.922	0.8500	0.053	0.035	sig
Pooled average		2353.79	-279.38	304.313	-0.7222	0.5215	0.1691	0.1141	insg

The above table 10 has contained the different indicators (see Appendix 6) helpful to analyze the simple correlation and regression between DY and MPS of the observed four commercial banks along with their pooled average, where DY is independent variable and MPS is dependent variable. With the help of these indicators, we can come to the following conclusions:

HBL

The regression constant or intercept coefficient (a) is 364.30, which shows that the average MPS would be Rs 364.30 if the dividend yield were zero. The result shows that the slope of the regression line (b) is 344.56, which shows that positive correlation exists between DY and MPS of HBL. One percent increase in DY causes Rs 344.56 increase in the market price of stock of the bank. The coefficient of determination r_2 is 0.0209, which indicates that only 2.09% of the variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between DY and MPS is 0.1447, which indicates that there is a poor positive relationship between DY and MPS of HBL. But, since 'r' is less than its 6*P.E(r) =6*0.233=1.398, the value of 'r' is not significant.

NIBL

The regression constant or intercept coefficient (a) is 1058.887, which shows that the average MPS would be Rs 1058.887 if the DY were zero. The result shows that the slope of the regression line (b) is -2.985, which indicates that negative correlation exist between DY and MPS of NIBL. One percent increase in DY causes Rs 2.985 decrease in the market price of stock of the bank. The coefficient of determination r_2 is 0.00026, which indicates that only 0.026% of the variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between DY and MPS is -0.01615, which indicates that there is a poor negative relationship between DY and MPS of NIBL. But since 'r' is less than6* P.E(r) =6*0.2308=1.384, the value of 'r' is not significant.

NABIL

The regression constant or intercept coefficient (a) is 2276.88, which shows that the average MPS would be Rs 2276.88 if the DY were zero. The result shows that the slope of the regression line (b) is -212.338, which indicates that negative correlation

exists between DY and MPS of NABIL One percent increase in DY causes Rs 212.338 decrease in the market price of stock of the bank. The coefficient of determination r_2 is 0.4225, which indicates that 42.25% of the variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between DY and MPS is -0.65. It indicates that there is a high degree of negative relationship between DY and MPS of NABIL Bank. Here, since r is less than 6*P.E(r) =6*0.1375=0.825, the correlation is not significant

SCBNL

The regression constant or intercept coefficient (a) is 5417.175 which show that the average MPS would be Rs 5417.175 if the DY were zero. The result shows that the slope of the regression line (b) -605.46 which indicates that negative correlation exists between DY and MPS of SCBNL. Of increase in DY causes Rs 605.46 decrease in the market price of stock of the bank. The coefficient of determination (r_2) is 0.8500 which indicates that 85% of the variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between DY and MPS is -0.922, which indicates that there is a high degree o negative relation between DY and MPS of SCBNL. Here, since (r) is greater than 6*P.E (r) = 6*0.035 = 0.21, the value of 'r' is considered to be significant.

Pooled Average

The regression constant or intercept coefficient (a) is 2353.79765, which shows that the average MPS would be Rs 2353.79765 if the DY were zero. The result shows that the slope of the regression line (b) is -279.38, which indicates that negative correlation exists between DY and MPS of the observed banks in average 1% increase in DY causes Rs 279.38 decrease in market price of stock of the observed banks. The coefficient of determination r2 is 0.5215, which indicates that 52.15% of the variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between DY and MPS is -0.7222, which indicates that there is a high degree of negative relationship between DY and MPS of observed banks in average. But, since 'r' is more than 6*P.E(r) =6*0.1141=0.6846, the value of 'r' is considered to be significant.

4.2.2 Multiple Regression and Coefficient of Determination Analysis

The market price of stock depends on more than one variable. So, the results of simple regression analysis are not reliable as far, the multiple regression analysis eliminates all the limitations of simple regression analysis. This part of the study is designed to examine the relationship between two independent variables and one dependent variable. In this study, the pooled average data of the observed banks are used for multiple regression and coefficient of determination analysis.

A: Multiple Regression and Coefficient of Determination Analysis of MPS on EPS and DPS

The model developed for this purpose is as:

$X_1 = a_1 + b_1.X_2 + b_2.X_3$

Where, X_1 = Market price per share (Dependent Variables)

X_2 = Earning per share (Independent Variables)

X_3 = Dividend per share (Independent Variables)

a_1 = Regression constant

$b_1 b_2$ = Coefficient of Net Regression (or simply, regression constants)

The following results have been observed from the multiple regressions Model (see Appendix

Table 11

Multiple Regression and Coefficient of Determination Analysis of MPS on EPS and DPS

Regression Model	a_1	b_1	b_2	$S_{1..23}$	$R^2_{1..23}$
$X_1 = a_1 + b_1.X_2 + b_2.X_3$	-221.41	1.047	29.147	376.71619	0.38306

The above table 11 shows the output of multiple regression analysis between MPS (X_1) and other variables [EPS (X_2) and DPS(X_3)] of the banks in average. The regression constant a_1 is -221.41 that indicate that when EPS and DPS equal to zero, then MPS of the observed banks would be Rs -221.41. The regression coefficient b_1,

for banks is 1.047. It indicates that one rupee increase in MPS. Another regression coefficient b_2 is 29.147 which indicate that unitary increment in DPS causes 29.147 increase in MPS – this the independent variable EPS has positive impact in MPS where as another independent variable DPS has also positive impact in MPS of the observed banks in average. As the coefficient of multiple determinations $R^2_{1.23}$ is 0.38306, it means 38.306 of variation in MPS is explained by variation in DPR and DPS.

B. Multiple Regression and Coefficient of Determination Analysis of MPS on DPR and DPS

The model developed for this purpose is as:

$$X_1 = a_1 + b_1.X_2 + b_2.X_3$$

Where, X_1 = Market price per share (Dependent Variable)

X_2 = Dividend payout ratio (Independent variable)

X_3 = Dividend per share (Independent variable)

a_1 = Regression Constant

b_1b_2 = Coefficient of net regression (or simply, regression constant)

The following results have been obtained from the multiple regression models. (See Appendix 9)

Table 12

Multiple Regression and Coefficient of Determination Analysis of MPS on DPR and **DPS**

Regression Model	a_1	b_1	b_2	$S_{1..23}$	$R^2_{1.23}$
$X_1 = a_1 + b_1.X_2 + b_2.X_3$	7.97	-15.62	42.68	337.37	0.5097

The above table 12 shows the output of multiple regression analysis between MPS (X_1) and other variables [DPR(X_2) and DPS (X_3)] of the banks in average. The regression constant a1 is 7.97 that indicate that when DPR and DPS equal to zero, then MPS of the observed banks would be Rs 7.97.The regression coefficient b1 for banks is -15.62. It indicates that one percent increase in DPR cause Rs 15.62 decrease in MPS. Another regression coefficient b2 is 42.68, which indicates that unitary

increment in DPS causes Rs 42.68 increase in MPS. Thus, the independent variable DPR has negative impact in MPS where as another independent DPS has positive impact in MPS of the observed banks in average. As the coefficient of multiple determinations $R^2_{1..23}$ is 0.5097, it means 50.97% variation in MPS is explained by variation in DPR and DPS

4.3 Major Findings

A. Findings from financial indicators Analyses

i. EPS of the commercial banks in average is fluctuating year by year. SCBNL has got success to keep the increased trend of EPS up to 2008/09 and constant from 2009/10 to 2011/12. NIBL is also in the lowest position regarding earning capacity among the banks.
ii. DPS of the commercial banks in average is also fluctuating trend. SCBNL has got success to keep it above the average pooled line throughout the study period. It seems that this bank is trying to adopt constant dividend policy.
iii. SCBNL has kept its highest DPR ratio in each year periods observed. It's above the pooled average line. NIBL has the most fluctuating DPR. In average coefficient of variation of DPR are 19.89.
iv. MPS of each bank is also in fluctuating trend. Coefficient of Variation of MPS for the sample banks in average is 28.17 which indicate the fluctuation of MPS. Among the sample firms, NABIL is the most risky bank from the point of view of MPS.
v. There is a highly positive correlation between EPS and DPS of the sample firms in average and the obtained value of correlation coefficient is statistically significant.
vi. There is a moderate positive correlation between EPS and MPS of the samples firms in average. It is highly positive correlated in case of HBL.
vii. There is a very poor positive correlation between DPR and MPS of the samples firms in average. It indicates that if the sample firms want to increase there stock price, then they should increase DPR. and the obtained value of correlation coefficient is statistically not significant, it is less than 6.P.E(r) in average

viii. There is a highly negative correlation between DY and MPS of the sample firms in average. SCBNL has the highest negative correlation between DY and MPS and it's statistically significant. HBL has poor positive correlation between DY and MPS.

ix. From the multiple regression analysis of MPS on EPS and DPS. it has been found that there is a positive relation between MPS and EPS and MPS and DPS.

CHAPTER-V
SUMMARY CONCLUSION AND RECOMMENDATION

This chapter focuses on summarizing the study held with the conclusions and some recommendation on the basis of findings. For this purpose, the chapter has been divided into three parts as summary, conclusion and recommendation.

5.1 Summary

Dividends are payment made to stockholders from firm's earnings in return to their investment whether those earnings were generated in the current periods or previous periods and policy refers to the decision about how much earnings at what form should be distributed to shareholders and the amount to be retained or reinvested in the firm

This paper attempts to determine the impact of dividend policy on market price of share. A sample of four commercial banks listed in Nepal Stock Exchange is examined for the period from 2004/05 to 2011/12. To make the research more reliable, different types of analysis have been conducted to find out the appropriate relationship between market price and other variables, which affect the dividend.

5.2 Conclusion

It is found from the study that banks are paying dividend but there is no consistency in dividend distribution in all sample banks observed. NIBL has not given any cash dividend in 2 years 2006/07 and 2007/08. The research shows that none of the banks have well defined and appropriate policy regarding dividend payment. They don't seem to follow the optimum dividend policy of paying regular dividend as per the shareholders expectation; it might cause uncertainty among shareholders.

5.3 Recommendation

Based on the finding of the research, following recommendations are made for the better applications of the dividend policy to have the strong MPS in the capital market.

i. As the EPS of all the sample banks except SCBNL is in the fluctuating trend, it may give uncertainty to shareholders and negatively affect the market price of the respective shares. So, those banks should search the fruitful investment opportunities.

ii. From the analysis, it has been found that none of the sample banks have followed consistent dividend policy as a result of which a high degree of fluctuation is observed in DPS. It may not satisfy minimum expectations of shareholders. So, all the firms should have well defined dividend policy which helps to satisfy the investors and to create better position of firm in the capital market. For this, the concerned firms may adopt the policy of paying reasonable DPS every year as it will create positive attitudes of shareholders towards the firms, which consequently helps to increase the market value of the shares. The psychological value of the shareholders is also valued as the assets of the firm.

iii. Although the payout ratio of the sample firm is fluctuating from year to year, there is no rational approach in deciding the pay out. All the firms should analyze the internal rate of return and cost of capital in deciding DPR, which helps to maximize the shareholders wealth

iv. All the firms must accept one major fact that EPS is to be considered for determining dividend amount. The analysis shows the condition of not being able to say either significant or insignificant relationship between EPS and DPS in average. It is important to consider earning rather than neglecting it while making dividend decision.

v. The legal rules and regulation must be in favor of investors to exercise the dividend practice and to protect the shareholders' rights.

vi. The firm should follow the proper dividend policy. Dividend payment as a financing decisions need the formation of a comprehensive long term financial

policy and optimal dividend policy to fulfill the investors expectation and interest

vii. The decision regarding dividend payment should not be biased and it should always in favor of the prosperity and betterment of the company.

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APPENDICES

Appendix-1

Simple correlation and regression analysis between EPS & DPS

Himalayan Bank Limited.

Year	EPS (X)	DPS (Y)	XY	X^2	Y^2
2004/05	86.07	50.00	4303.5	7403.04	2500.00
2005/06	83.08	50.00	4154	6902.28	2500.00
2006/07	93.56	27.5	2572.9	8753.47	756.25
2007/08	60.26	25.00	1506.5	3631.26	625.00
2008/09	49.45	1.32	65.27	2445.30	1.74
2009/10	49.05	20.00	981.00	2405.90	400.00
2010/11	47.91	20.00	958.20	2295.36	400.00
2011/12	59.24	5.00	296.2	3509.37	25.00
n = 8	X X528.62	Y X192.82	XY X 14837.57	X^2 X 37345.98	Y^2 X 8280.25

Here,

X X528.62

Y X192.82

XY X14837.57

X^2 X37345.98

Y^2 X8280.25

Mean $\bar{X}$ X X / n

$$= \frac{528.62}{8}$$

=66.0775

Mean $\bar{Y}$ X Y / n

$$= \frac{192.82}{8}$$

=24.1025

Coefficient of correlation r X $$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$$

=0.59

Coefficient of Determination r^2 =0.59^2

=0.348

Standard Error of correlation coefficient S.E X $$\frac{1 \text{Z} r^2}{\sqrt{n}}$$

=0.23

Probable error of correlation coefficient, P.E(r) X $$0.6745 * \frac{1 \text{Z} r^2}{\sqrt{n}}$$

=0.155

Independent Variable (Predictor): EPS (SayX)
Dependent Variable : DPS (SayY)
Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=0.70

a = $\bar{y} - b\bar{x}$
= -22.149

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 19.56$$

Nepal Investment Bank Limited

Year	EPS (X)	DPS (Y)	XY	X^2	Y^2
2004/05	33.75	30	1012.5	1139.06	900
2005/06	53.68	25	1342	2881.54	625
2006/07	33.17	0.00	0.00	1100.24	0.00
2007/08	33.59	0.00	0.00	1128.28	0.00
2008/09	33.56	20.00	671.2	1126.27	400
2009/10	51.7	15.00	775.5	2672.89	225
2010/11	39.31	12.5	491.37	1545.27	156.25
2011/12	59.35	35.00	2077.25	3522.42	1225
n = 8	$\sum X$ = 338.11	$\sum Y$ =137.5	$\sum XY$ = 6369.82	$\sum X^2$ =15115.97	$\sum Y^2$ = 3531.25

Here,

$\sum X$ =338.11

$\sum Y$ =137.5

$\sum XY$ =6369.82

$\sum X^2$ =15115.97

Y^2 X3531.25

Mean $\bar{x}$ X$\frac{X}{n}$

=42.26

Mean $\bar{y}$ X$\frac{Y}{n}$

= 17.18

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

=0.568

Coefficient of Determination r^2 =0.323

Standard Error of correlation coefficient SE X$\frac{1 \text{ Z} r^2}{\sqrt{n}}$

=0.23

Probable Error of correlation coefficient X0.6745*$\frac{1 \text{ Z} r^2}{\sqrt{n}}$

=0.155

Independent Variable (Predictor): EPS (SayX)
Dependent Variable : DPS (SayY)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$Y \text{ X} na \Gamma b \quad X$$
$$XY \text{ X} a \quad X \Gamma b \quad X^2$$

Solving these two normal equations we get,

b X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{n \quad X^2 \text{ Z}(\quad X)^2}$

=0.674

a = $\bar{y}$ Z$b\bar{x}$

=--11.30

Standard Error of the Estimate,

SE e =$\sqrt{\frac{Y^2 \text{ Z} a \quad Y \text{ Z} b \quad XY}{n \text{ Z} 2}}$ =11.48

NABIL Bank

Year	EPS (X)	DPS (Y)	XY	X^2	Y^2
2004/05	67.84	50	3392	4602.26	2500
2005/06	83.79	55	4608.45	7020.76	3025
2006/07	59.26	40	2370.4	3511.74	1600
2007/08	55.25	30	1657.5	3052.56	900
2008/09	84.66	50	4233	7167.31	2500
2009/10	92.61	65	6019.65	8576.61	4225
2010/11	103.45	70	7241.56	10701.90	4900
2011/12	129.21	85	10982.85	16695.22	7225
n = 8	X X676.07	Y X445	XY X 40505.35	X^2 X 61328.36	Y^2 X 26875

Here,

X X676.07

Y X445

XY X40505.35

X^2 X61328.36

Y^2 X26875

Mean $\bar{x}$ X$\frac{X}{n}$

=84.50

Mean $\bar{y}$ X$\frac{Y}{n}$

= 55.625

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

=0.97

Coefficient of determination r^2=0.94

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$

= -0.0208

Probable Error of correlation coefficient X0.6745*$\frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.01406

Independent Variable (Predictor): EPS (SayX)
Dependent Variable : DPS (SayY)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$Y = na + b\sum X$$

$$XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=0.69

$a = \bar{y} - b\bar{x}$

= -2.68

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 4.4157$$

Standard Chartered Bank Nepal Limited

Year	EPS (X)	DPS (Y)	XY	X^2	Y^2
2004/05	105.86	80	8468.8	11206.34	6400
2005/06	115.62	100	11562	13367.98	10000
2006/07	126.88	100	12688	16098.53	10000
2007/08	141.13	100	14113	19917.68	10000
2008/09	149.3	110	16423	22290.49	12100
2009/10	143.55	110	15790.5	20606.6	12100
2010/11	143.55	120	17226	20606.6	1400
2011/12	143.55	130	18661.5	20606.6	16900
n = 8	$\sum X$ =1069.44	$\sum Y$ =850	$\sum XY$ = 114932.8	$\sum X^2$ = 144700.82	$\sum Y^2$ = 91900

Here,

$\sum X$ =1069.44

$\sum Y$ =850

$\sum XY$ =114932.8

$\sum X^2$ =144700.82

$\sum Y^2$ =91900

Mean $\bar{x} = \frac{\sum X}{n}$

=133.68

Mean $\bar{y} = \frac{\sum Y}{n}$

= 106.25

Coefficient of Correlation $r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2}\sqrt{n \sum Y^2 - (\sum Y)^2}}$

=0.78

Coefficient of Determination $r^2 = 0.61$

Standard Error of correlation coefficient $SE = \frac{1 - r^2}{\sqrt{n}}$

= 0.13

Probable Error of correlation coefficient $= 0.6745 * \frac{1 - r^2}{\sqrt{n}}$

=0.087

Independent Variable (Predictor): EPS (SayX)

Dependent Variable : DPS (SayY)

Regression Equation of Y on x is

$Y = a + bx$

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b \sum X$$

$$\sum XY = a \sum X + b \sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n \sum XY - \sum X \sum Y}{n \sum X^2 - (\sum X)^2}$$

=0.75

$a = \bar{y} - b\bar{x}$

=5.99

Standard Error of the Estimate,

$SE\ e = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}}$ =10.07

Pooled Average

Year	EPS (X)	DPS (Y)	XY	X^2	Y^2
2004/05	73.38	52.5	3852.45	5384.62	2756.25
2005/06	84.042	57.5	4832.41	7063.05	3306.25
2006/07	78.218	41.87	3275.379	6118.05	1753.51
2007/08	72.55	38.75	2811.60	5264.59	1501.56
2008/09	80.74	45.33	3660.05	6519.35	2054.80
2009/10	84.221	52.5	4421.94	7094.27	2756.25
2010/11	83.56	55.62	4647.60	6982.27	3093.58
2011/12	97.84	63.75	6237.3	9572.66	4064.06
n = 8	$\sum X$ =654.54	$\sum Y$ =407.52	$\sum XY$ = 33738.729	$\sum X^2$ = 53998.86	$\sum Y^2$ = 21286.26

Here,

$X = 654.54$

$Y = 407.52$

$XY = 33738.729$

$X^2 = 53998.86$

$Y^2 = 21286.26$

Mean $\bar{x} = \frac{X}{n}$

$= 81.8175$

Mean $\bar{y} = \frac{Y}{n}$

$= 50.94$

Coefficient of Correlation $r = \frac{n(XY) - (X)(Y)}{\sqrt{n(X^2) - (X)^2}\sqrt{n(Y^2) - (Y)^2}}$

$= 0.8176$

Coefficient of Determination $r^2 = 0.6685$

Standard Error of correlation coefficient $SE = \frac{1 - r^2}{\sqrt{n}}$

$= 0.11716$

Probable Error of correlation coefficient $= 0.6745 * \frac{1 - r^2}{\sqrt{n}}$

$= 0.079$

Independent Variable (Predictor): EPS (SayX)
Dependent Variable : DPS (SayY)

Regression Equation of Y on x is

$Y = a + bx$

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$Y = na + b(X)$$

$$XY = a(X) + b(X^2)$$

Solving these two normal equations we get,

$$b = \frac{n(XY) - (X)(Y)}{n(X^2) - (X)^2}$$

$= 0.888$

$$a = \bar{y} - b\bar{x}$$
$$= -21.765$$

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{Y^2 - a - Y - b - XY}{n - 2}} = 5.7146$$

Appendix-II

Simple correlation and regression between EPS and MPS

Himalayan Bank

Year	EPS (X)	MPS (Y)	XY	X^2	Y^2
2004/05	86.07	1000	86070	7408.045	1000000
2005/06	83.08	1700	141236	6902.288	2890000
2006/07	93.56	1500	140340	8753.47	2250000
2007/08	60.26	1000	60260	3631.268	1000000
2008/09	49.45	836	41340.2	2445.303	698896
2009/10	49.05	840	41202	2405.903	705600
2010/11	47.91	920	44077.2	2295.368	846400
2011/12	59.24	1100	65164	3509.377	1210000
n = 8	X X528.62	Y X8896	XY X 619689.4	X^2 X 37351.022	Y^2 X 10600896

Here,

X X528.62

Y X8896

XY X619689.4

X^2 X37351.022

Y^2 X10600896

Mean $\bar{x}$ X$\frac{X}{n}$

=66.077

Mean $\bar{y}$ X$\frac{Y}{n}$

= 1112

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

= 0.769

Coefficient of Determination r^2 = 0.5913

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.144

Probable Error of correlation coefficient X0.6745 * $\frac{1 \text{Z} r^2}{\sqrt{n}}$

0.0971

Independent Variable (Predictor): EPS (SayX)

Dependent Variable : MPS (SayY)

Regression Equation of Y on x is

$$Y=a+bx$$

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=13.1607

$$a = \bar{y} - b\bar{x}$$

=242.3804

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

=219.5198

Nepal Investment Bank Limited

Year	EPS (X)	MPS (Y)	XY	X^2	Y^2
2004/05	33.75	822	27742.5	1139.0685	675684
2005/06	53.68	1401	75205.68	2881.54	1962801
2006/07	33.17	1150	38145.5	1100.24	1322500
2007/08	33.59	760	25528.4	1128.28	577600
2008/09	39.56	795	31450.2	1564.99	632025
2009/10	51.70	940	48598	2672.89	883600
2010/11	39.31	1000	39310	1545.27	1000000
2011/12	59.35	1280	75968	3522.42	1638400
n =8	$\sum X$ =344.11	$\sum Y$ =8148	$\sum XY$ = 361948.28	$\sum X^2$ = 15554.45	$\sum Y^2$ = 8692610

Here

$\sum X$ =344.11

$\sum Y$ =8148

$\sum XY$ =361948.28

$\sum X^2$ =15554.45

Y^2 X8692610

Mean $\bar{x}$ X$\frac{X}{n}$

=43.01

Mean $\bar{y}$ X$\frac{Y}{n}$

= 1018.5

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$ = 0.666

Coefficient of Determination r^2 = 0.4435

Standard Error of correlation coefficient SE X$\frac{1 \text{ Z} r^2}{\sqrt{n}}$ = 0.1967

Probable Error of correlation coefficient X0.6745*$\frac{1 \text{ Z} r^2}{\sqrt{n}}$

=0.1327

Independent Variable (Predictor): EPS (SayX)
Dependent Variable : MPS (SayY)

Regression Equation of Y on x is

Y=a +bx

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$Y \text{ X} na \Gamma b \quad X$$

$$XY \text{ X} a \quad X \Gamma b \quad X^2$$

Solving these two normal equations we get,

b X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{n \quad X^2 \text{ Z}(\quad X)^2}$

= 15.23

a = $\bar{y}$ Z$b\bar{x}$

=363.4120

Standard Error of the Estimate,

SE e =$\sqrt{\frac{Y^2 \text{ Z} a \quad Y \text{ Z} b \quad XY}{n \text{ Z} 2}}$ =191.07

NABIL Bank

Year	EPS(X)	MPS (Y)	XY	X^2	Y^2
2004/05	67.84	700	47488	4602.266	490000
2005/06	83.79	1400	117306	7020.764	1960000
2006/07	59.26	1500	88890	3511.748	2250000
2007/08	55.25	735	40608.75	3052.563	540225
2008/09	84.66	735	62225.1	7167.316	540225
2009/10	92.61	1000	92610	8576.612	1000000
2010/11	103.45	1505	155692.25	10701.9025	2265025
2011/12	129.21	2240	289430.4	16695.2241	5017600
n = 8	X X676.07	Y X9815	XY X 894250.5	X^2 X 61328.3956	Y^2 X 14063075

Here

X X676.07

Y X9815

XY X894250.5

X^2 X61328.3956

Y^2 X14063075

Mean $\bar{x}$ X$\frac{X}{n}$

=84.50

Mean $\bar{y}$ X$\frac{Y}{n}$

=1226.87

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$ = 0.7037

Coefficient of Determination r^2 = 0.4952

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ = 0.1784

Probable Error of correlation coefficient X0.6745*$\frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.1203

Independent Variable (Predictor): EPS (SayX)
Dependent Variable : MPS (SayY)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=15.4478

$$a = \bar{y} - b\bar{x}$$

= -78.4691

Standard Error of the Estimate,

$$SE_e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

=412.1177

Standard Chartered Bank Nepal Limited

Year	EPS(X)	MPS(Y)	XY	X^2	Y^2
2004/05	105.86	1162	123009.32	11206.33	1350244
2005/06	115.62	1985	229505.7	13367.98	3940225
2006/07	126.88	2144	272030.72	16098.53	4596736
2007/08	141.13	1550	218751.5	19917.67	2402500
2008/09	149.30	1640	244852	22290.49	2689600
2009/10	143.55	1745	250494.75	20606.60	3045025
2010/11	143.55	2345	336624.75	20606.60	5499025
2011/12	143.55	3775	541901.25	20606.60	14250625
n =8	$\sum X$ =1069.44	$\sum Y$ =16346	$\sum XY$ = 2217169.99	$\sum X^2$ = 144700.8	$\sum Y^2$ = 37773980

$\sum X$ =1069.44

$\sum Y$ =16346

$\sum XY$ =2217169.99

X^2 X144700.8

Y^2 X37773980

Mean $\bar{x}$ X$\frac{X}{n}$

=133.68

Mean $\bar{y}$ X$\frac{Y}{n}$

= 2043.25

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

=0.367

Coefficient of Determination r^2 = 0.1346

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.3058

Probable Error of correlation coefficient X0.6745*$\frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.2062

Independent Variable (Predictor): EPS (SayX)
Dependent Variable : MPS (SayY)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

Y X$na \Gamma b \quad X$

XY X$a \quad X \Gamma b \quad X^2$

Solving these two normal equations we get,

b X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{n \quad X^2 \text{ Z}(\quad X)^2}$

= 18.432

a = $\bar{y}$ Z$b\bar{x}$

= -420.73

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{Y^2 - a\sum Y - b\sum XY}{n-2}}$$

$$= 794.18$$

POOLED AVERAGE

Year	EPS(X)	MPS(Y)	XY	X^2	Y^2
2004/05	73.36	921	67582.98	5384.62	848241
2005/06	84.04	1621.5	136270.86	7062.72	2629262.25
2006/07	78.22	1573.5	123079.17	6118.36	2475902.25
2007/08	72.56	1011.25	73376.3	5264.95	1022626.56
2008/09	80.74	1001.25	80840.92	6518.94	1002501.56
2009/10	84.23	1131.25	95285.18	7094.69	1279726.56
2010/11	83.56	1442.5	120535.3	6982.27	2080806.25
2011/12	97.84	2098.75	205341.7	9572.66	4404751.56
n = 8	$\sum X$ = 654.57	$\sum Y$ = 10801	$\sum XY$ = 902312.41	$\sum X^2$ = 53999.21	$\sum Y^2$ = 15743817.99

$\sum X$ = 654.57

$\sum Y$ = 10801

$\sum XY$ = 902312.41

$\sum X^2$ = 53999.21

$\sum Y^2$ = 15743817.99

Mean $\bar{x} = \frac{\sum X}{n}$

$= 81.82$

Mean $\bar{y} = \frac{\sum Y}{n}$

$= 1350.12$

Coefficient of Correlation $r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}}$

$= 0.8198$

Coefficient of Determination $r^2 = 0.6720$

Standard Error of correlation coefficient $SE = \frac{1 - r^2}{\sqrt{n}} = 0.0637$

Probable Error of correlation coefficient $= 0.6745 * \frac{1 - r^2}{\sqrt{n}}$

$= 0.0429$

Independent Variable (Predictor): EPS(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

$$Y=a+bx$$

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

$$= 42.043$$

$$a = \bar{y} - b\bar{x}$$

$$= -2089.83$$

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

$$=251.739$$

Appendix-III
Simple correlation and regression analysis between DPS and MPS

Himalayan Bank

Year	DPS(X)	MPS(Y)	XY	X^2	Y^2
2004/05	50	1000	50000	2500	1000000
2005/06	50	1700	85000	2500	2890000
2006/07	27.50	1500	41250	756.25	2250000
2007/08	25	1000	25000	625	1000000
2008/09	1.32	836	1103.52	1.7424	698896
2009/10	20	840	16800	400	705600
2010/11	20	920	18400	400	846400
2011/12	5	1100	5500	25	1210000
n = 8	X X198.82	Y X8896	XY X 243053.52	X^2 X 7207.9924	Y^2 X 10600896

X X198.82

Y X8896

XY X243053.52

X^2 X7207.9924

Y^2 X10600896

Mean $\bar{x}$ X$\frac{X}{n}$

=24.85

Mean $\bar{y}$ X$\frac{Y}{n}$

= 1112

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

= 0.5480

Coefficient of Determination r^2 = 0.300

Standard Error of correlation coefficient SE X$\frac{1 \text{ Z} r^2}{\sqrt{n}}$ =0.2473

Probable Error of correlation coefficient X$0.6745 * \frac{1 \text{ Z} r^2}{\sqrt{n}}$

=0.16680

Independent Variable (Predictor): DPS(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,

a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=9.69

$$a = \bar{y} - b\bar{x}$$

=871.2035

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

= 287.376

Nepal Investment Bank Limited

Year	DPS(X)	MPS(Y)	XY	X^2	Y^2
2004/05	30	822	24660	900	675684
2005/06	25	1401	35025	625	1962801
2006/07	0	1150	0	0	1322500
2007/08	0	760	0	0	577600
2008/09	20	795	15900	400	632025
2009/10	15	940	14100	225	883600
2010/11	12.5	1000	12500	156.25	1000000
2011/12	35	1280	44800	1225	1638400
n = 8	$\sum X$ =137.5	$\sum Y$ =8148	$\sum XY$ = 146985	$\sum X^2$ = 3531.25	$\sum Y^2$ = 8692610

$\sum X$ =137.5

$\sum Y$ =8148

$\sum XY$ =146985

$\sum X^2$ =3531.25

$\sum Y^2$ =8692610

Mean $\bar{x} = \frac{\sum X}{n}$

=17.18

Mean $\bar{y} = \frac{Y}{n}$

= 1018.5

Coefficient of Correlation $r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2}\sqrt{n \sum Y^2 - (\sum Y)^2}}$

= 0.3236

Coefficient of Determination r^2 =0.1047

Standard Error of correlation coefficient SE $= \frac{1 - r^2}{\sqrt{n}}$ =0.3165

Probable Error of correlation coefficient $0.6745 * \frac{1 - r^2}{\sqrt{n}}$

=0.21347

Independent Variable (Predictor): DPS(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b \sum X$$

$$\sum XY = a \sum X + b \sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n \sum XY - \sum X \sum Y}{n \sum X^2 - (\sum X)^2}$$

=5.9430

a = $\bar{y} - b\bar{x}$

=916.399

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}}$$

=242.3011

NABIL Bank

Year	DPS(X)	MPS(Y)	XY	X^2	Y^2
2004/05	50	700	35000	2500	490000
2005/06	55	1400	77000	3025	1960000
2006/07	40	1500	60000	1600	2250000
2007/08	30	735	22050	900	540225
2008/09	50	735	36750	2500	540225
2009/10	65	1000	65000	4225	1000000
2010/11	70	1505	105350	4900	2265025
2011/12	85	2240	190400	7225	5017600
n = 8	X X445	Y X9815	XY X 26875	X^2 X 14063075	Y^2 X 591550

X X445

Y X9815

XY X591550

X^2 X26875

Y^2 X14063075

Mean $\bar{x}$ X$\frac{X}{n}$

=55.625

Mean $\bar{y}$ X$\frac{Y}{n}$

=1226.875

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

= 0.696

Coefficient of Determination r^2 = 0.4846

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.1074

Probable Error of correlation coefficient X$0.6745 * \frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.07244

Independent Variable (Predictor): DPS(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=21.468

$$a = \bar{y} - b\bar{x}$$

=32.7125

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

= 416.859

Standard chartered bank Nepal limited

Year	DPS(X)	MPS(Y)	XY	X^2	Y^2
2004/05	80	1162	92960	6400	1350244
2005/06	100	1985	198500	10000	3940225
2006/07	100	2144	214400	10000	4596736
2007/08	100	1550	155000	10000	2402500
2008/09	110	1640	180400	12100	2689600
2009/10	110	1745	191950	12100	3045025
2010/11	120	2345	281400	14400	5499025
2011/12	130	3775	490750	16900	14250625
n = 8	$\sum X$ =850	$\sum Y$ =16346	$\sum XY$ = 1805360	$\sum X^2$ = 91900	$\sum Y^2$ = 37773980

$\sum X$ =850

$\sum Y$ =16346

$\sum XY$ =1805360

$\sum X^2$ =91900

$\sum Y^2$ =37773980

Mean $\bar{x} = \frac{X}{n}$

=106.25

Mean $\bar{y} = \frac{Y}{n}$

= 2043.25

Coefficient of Correlation $r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2}\sqrt{n \sum Y^2 - (\sum Y)^2}}$

= 0.823

Coefficient of Determination r^2 =0.677

Standard Error of correlation coefficient SE $= \frac{1 - r^2}{\sqrt{n}}$ =0.1141

Probable Error of correlation coefficient $= 0.6745 * \frac{1 - r^2}{\sqrt{n}}$

=0.077

Independent Variable (Predictor): DPS(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b \sum X$$

$$\sum XY = a \sum X + b \sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n \sum XY - \sum X \sum Y}{n \sum X^2 - (\sum X)^2}$$

=43.211

a = $\bar{y} - b\bar{x}$

=-2547.938

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}}$$

= 484.967

Pooled average

Year	DPS(X)	MPS(Y)	XY	X^2	Y^2
2004/05	52.50	921	48352.5	275625	848241
2005/06	57.50	1621.5	93236.25	3306.25	2629262.25
2006/07	41.87	1573.5	65882.44	1753.09	2475902.25
2007/08	38.75	1011.25	39185.93	1501.56	1022626.56
2008/09	45.33	1001.25	45386.66	2054.808	1002501.56
2009/10	52.50	1131.25	59390.62	2756.25	1279726.56
2010/11	55.62	1442.5	80231.85	3093.58	2080806.25
2011/12	63.75	2098.5	133779.37	4064.06	4403702.25
n = 8	X X407.82	Y X 10800.75	XY X 565445.62	X^2 X 21285.87	Y^2 X 15742769.68

X X407.82

Y X10800.75

XY X565445.62

X^2 X21285.87

Y^2 X15742769.68

Mean $\bar{x}$ X$\frac{X}{n}$

=50.97

Mean $\bar{y}$ X$\frac{Y}{n}$

= 1350.094

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

=0.6188

Coefficient of Determination r^2 = 0.3829

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.2181

Probable Error of correlation coefficient X$0.6745 * \frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.1471

Independent Variable (Predictor): DPS(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

$$Y=a+bx$$

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=29.926

$$a = \bar{y} - b\bar{x}$$

=-175.23

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

=344.92

Appendix-IV
Simple correlation and Regression Analysis between DPR(%) and MPS

Himalayan Bank

Year	DPR(X)	MPS(Y)	XY	X^2	Y^2
2004/05	58.09	1000	58090	3374.448	1000000
2005/06	60.19	1700	102323	3622.836	2890000
2006/07	9	1500	13500	81	2250000
2007/08	41.49	1000	41490	1721.42	1000000
2008/09	2.66	836	223.76	7.0756	698896
2009/10	40.77	840	0	0	705600
2010/11	41.74	920	38400.8	1742.22	846400
2011/12	8.44	1100	9284	71.23	1210000
n = 8	X X262.38	Y X8896	XY X 263311.56	X^2 X 10620.22	Y^2 X10600896

X X262.38

Y X8896

XY X263311.56

X^2 X10620.22

Y^2 X10600896

Mean $\bar{x}$ X$\frac{X}{n}$

=32.79

Mean $\bar{y}$ X$\frac{Y}{n}$

=1112

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

= -0.753

Coefficient of Determination r^2 = 0.567

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.153

Probable Error of correlation coefficient X$0.6745 * \frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.103

Independent Variable (Predictor): DPR(X)

Dependent Variable : MPS(Y)

Regression Equation of Y on x is

$$Y = a + bx$$

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

$$= -14.12$$

$$a = \bar{y} - b\bar{x}$$

$$= 1574.99$$

Standard Error of the Estimate,

$$SE_e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

$$= 226.47$$

Nepal investment bank limited

Year	DPR(X)	MPS(Y)	XY	X^2	Y^2
2004/05	88.9	822	73075.8	7903.21	675684
2005/06	46.57	1401	65244.57	2168.765	1962801
2006/07	0	1150	0	0	1322500
2007/08	0	760	0	0	577600
2008/09	50.56	795	40195.2	2556.314	632025
2009/10	29.01	940	27269.4	841.5801	883600
2010/11	31.79	1000	31790	1010.60	1000000
2011/12	58.97	1280	75481.6	3477.46	1638400
n = 8	$\sum X$ =305.8	$\sum Y$ =8148	$\sum XY$ =313056.57	$\sum X^2$ = 17957.92	$\sum Y^2$ = 8692610

$\sum X$ =305.8

$\sum Y$ =8148

$\sum XY$ =313056.57

$\sum X^2$ =17957.92

$\sum Y^2$ =8692610

Mean $\bar{x} = \frac{X}{n}$

=38.22

Mean $\bar{y} = \frac{Y}{n}$

=1018.5

Coefficient of Correlation $r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2}\sqrt{n \sum Y^2 - (\sum Y)^2}}$

= 0.033

Coefficient of Determination r^2 =0.001089

Standard Error of correlation coefficient SE $= \frac{1 - r^2}{\sqrt{n}}$ =0.353

Probable Error of correlation coefficient $= 0.6745 * \frac{1 - r^2}{\sqrt{n}}$

=0.238

Independent Variable (Predictor): DPR(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b \sum X$$

$$\sum XY = a \sum X + b \sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n \sum XY - \sum X \sum Y}{n \sum X^2 - (\sum X)^2}$$

=0.255

a = $\bar{y} - b\bar{x}$

=1008.75

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{Y^2 - a\sum Y - b\sum XY}{n-2}}$$

= 256.087

NABIL Bank

Year	DPR(X)	MPS(Y)	XY	X^2	Y^2
2004/05	73.70	700	51590	5431.69	490000
2005/06	65.64	1400	91896	4308.60	1960000
2006/07	67.49	1500	101235	4554.90	2250000
2007/08	54.30	735	39910.5	2948.49	540225
2008/09	59.06	735	43409.1	3488.08	540225
2009/10	70.19	1000	70190	4926.63	1000000
2010/11	67.66	1505	101828.3	4577.87	2265025
2011/12	65.78	2240	147347.2	4327	5017600
n = 8	$\sum X$ = 523.82	$\sum Y$ = 9815	$\sum XY$ = 647406.1	$\sum X^2$ = 34563.26	$\sum Y^2$ = 12299075

$\sum X$ = 523.82

$\sum Y$ = 9815

$\sum XY$ = 647406.1

$\sum X^2$ = 34563.26

$\sum Y^2$ = 12299075

Mean $\bar{x} = \frac{\sum X}{n}$

=65.47

Mean $\bar{y} = \frac{\sum Y}{n}$

=1226.87

Coefficient of Correlation $r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}}$

=0.57

Coefficient of Determination r^2 =0.32

Standard Error of correlation coefficient SE $= \frac{1 - r^2}{\sqrt{n}}$ =0.24

Probable Error of correlation coefficient $= 0.6745 * \frac{1 - r^2}{\sqrt{n}}$

=0.16188

Independent Variable (Predictor): DPR(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

$$Y = a + bx$$

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=17.91

$$a = \bar{y} - b\bar{x}$$

=54.3023

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

= 168.85

Standard Chartered Bank Nepal Limited

Year	DPR(X)	MPS(Y)	XY	X^2	Y^2
2004/05	75.57	1162	87812.34	5710.825	1350244
2005/06	86.40	1985	171682.7	7480.52	3940225
2006/07	78.81	2144	168968.6	6211.016	4596736
2007/08	70.86	1550	109833	5021.14	2402500
2008/09	73.68	1640	120835.2	5423.742	2689600
2009/10	76.63	1745	133719.4	5872.157	3045025
2010/11	83.59	2345	196018.55	6987.288	5499025
2011/12	90.56	3775	341864	8201.11	1420625
n = 8	$\sum X$ =635.19	$\sum Y$ =16346	$\sum XY$ = 1330733.79	$\sum X^2$ = 50912.798	$\sum Y^2$ = 37773980

$\sum X$ =635.19

$\sum Y$ =16346

$\sum XY$ =1330733.79

X^2 X50912.798

Y^2 X37773980

Mean $\bar{x}$ X$\frac{X}{n}$

=79.52

Mean $\bar{y}$ X$\frac{Y}{n}$

=2043.25

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

=0.823

Coefficient of Determination r^2 =0.677

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.114

Probable Error of correlation coefficient X$0.6745 * \frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.0768

Independent Variable (Predictor): DPR(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$Y \text{ X} na \Gamma b \quad X$$

$$XY \text{ X} a \quad X \Gamma b \quad X^2$$

Solving these two normal equations we get,

b X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{n \quad X^2 \text{ Z}(\quad X)^2}$

=0.096

a = $\bar{y}$ Z$b\bar{x}$

=2035.61

Standard Error of the Estimate,

SE e = $\sqrt{\frac{Y^2 \text{ Z} a \quad Y \text{ Z} b \quad XY}{n \text{ Z} 2}}$

=853.64

Pooled average

Year	DPR(X)	MPS(Y)	XY	X^2	Y^2
2004/05	74.065	921	68213.865	5485.62	848241
2005/06	64.723	1621.5	104948.344	4189.066	2629262.25
2006/07	43.923	1573.5	69112.84	1929.22	2475902.25
2007/08	41.663	1011.25	42131.708	1735.80	1022626.56
2008/09	46.49	1001.25	46548.112	2161.32	1002501.56
2009/10	43.958	1131.25	49727.487	1932.305	1279726.56
2010/11	56.19	1442.5	81054.075	3157.316	2080806.25
2011/12	55.93	2098.75	117383.087	3128.164	4404751.56
n = 8	X X426.942	Y X10801	XY X 579119.521	X^2 X 23718.812	Y^2 X 15743818

X X426.942

Y X10801

XY X579119.521

X^2 X23718.812

Y^2 X15743818

Mean $\bar{x}$ X$\frac{X}{n}$

=53.36

Mean $\bar{y}$ X$\frac{Y}{n}$

= 1350.125

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

=0.0818

Coefficient of Determination r^2 = 0.0066

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.3512

Probable Error of correlation coefficient X0.6745*$\frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.23688

Independent Variable (Predictor): DPR(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

$$Y=a+bx$$

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

$$=2.885$$

$$a = \bar{y} - b\bar{x}$$

$$=1196.1844$$

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

$$= 438.3815$$

Appendix-V
Simple correlation and regression analysis between DY (%) and MPS

Himalayan Bank

Year	DY(X)	MPS(Y)	XY	X^2	Y^2
2004/05	5	1000	5000	25	1000000
2005/06	2.94	1700	4998	8.64	2890000
2006/07	1.83	1500	2745	3.348	2250000
2007/08	2.5	1000	2500	6.25	1000000
2008/09	0.16	836	133.76	0.0256	698896
2009/10	2.38	840	1999.2	5.664	705600
2010/11	2.17	920	1996.4	4.7089	846400
2011/12	0.45	1100	495	0.2025	1210000
n = 8	X X17.43	Y X8896	XY X 19867.36	X^2 X 53.839	Y^2 X 10600896

X X17.43

Y X8896

XY X19867.36

X^2 X53.839

Y^2 X10600896

Mean $\bar{x}$ X$\frac{X}{n}$

=2.17

Mean $\bar{y}$ X$\frac{Y}{n}$

= 1112

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

=0.1447

Coefficient of Determination r^2 = 0.0209

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.346

Probable Error of correlation coefficient X0.6745*$\frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.233

Independent Variable (Predictor): DY(X)

Dependent Variable : MPS(Y)

Regression Equation of Y on x is

$$Y = a + bx$$

Where,

a =Regression Constant

b =Regression coefficient (slope of the regression line)

According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=344.56

$$a = \bar{y} - b\bar{x}$$

=364.3048

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

=292.8432

Nepal Investment Bank Limited

Year	DY(X)	MPS(Y)	XY	X^2	Y^2
2004/05	3.65	622	3000.3	13.32	675684
2005/06	1.78	1401	2493.78	3.168	1962801
2006/07	0.00	1150	0	0	1322500
2007/08	0.00	760	0	0	577600
2008/09	2.52	795	2003.4	6.3504	632025
2009/10	1.60	940	1504	2.56	883600
2010/11	1.25	1000	1250	1.5625	1000000
2011/12	2.73	1280	3494.4	7.4529	1638400
n = 8	$\sum X$ =13.53	$\sum Y$ =8148	$\sum XY$ = 13745.88	$\sum X^2$ = 34.4138	$\sum Y^2$ = 8692610

$\sum X$ =13.53

$\sum Y$ =8148

$\sum XY$ =13745.88

$\sum X^2$ =34.4138

Y^2 X8692610

Mean $\bar{x}$ X$\frac{X}{n}$

=1.69

Mean $\bar{y}$ X$\frac{Y}{n}$

=1018.5

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

= -0.01615

Coefficient of Determination r^2 = 0.0026

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.353

Probable Error of correlation coefficient X$0.6745 * \frac{1 \text{Z} r^2}{\sqrt{n}}$

=0.23809

Independent Variable (Predictor): DY(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$Y \text{ X} na \Gamma b \quad X$$

$$XY \text{ X} a \quad X \Gamma b \quad X^2$$

Solving these two normal equations we get,

b X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{n \quad X^2 \text{ Z}(\quad X)^2}$

=-2.985

a = $\bar{y}$ Z$b\bar{x}$

=1058.887

Standard Error of the Estimate,

SE e =$\sqrt{\frac{Y^2 \text{ Z} a \quad Y \text{ Z} b \quad XY}{n \text{ Z} 2}}$

= 132.8094

NABIL Bank

Year	DY(X)	MPS(Y)	XY	X^2	Y^2
2004/05	7.14	700	4998	50.9796	490000
2005/06	3.93	1400	5502	15.4449	1960000
2006/07	2.67	1500	4005	7.1289	2250000
2007/08	4.08	735	2998.8	16.6464	540225
2008/09	6.80	735	4998	46.24	540225
2009/10	6.50	1000	6500	42.25	1000000
2010/11	4.65	1505	6998.25	21.6225	2265025
2011/12	3.79	2240	8489.6	14.3641	5017600
n = 8	X X39.56	Y X9815	XY X 44489.65	X^2 X 214.6764	Y^2 X 14063075

X X39.56

Y X9815

XY X44489.65

X^2 X214.6754

Y^2 X14063075

Mean $\bar{x}$ X$\frac{X}{n}$

=4.945

Mean $\bar{y}$ X$\frac{Y}{n}$

=1226.875

Coefficient of Correlation r X$\frac{n \quad XY \text{ Z} \quad X \quad Y}{\sqrt{n \quad X^2 \text{ Z}(\quad X)^2}\sqrt{n \quad Y^2 \text{ Z}(\quad Y)^2}}$

= -0.65

Coefficient of Determination r^2 =0.4225

Standard Error of correlation coefficient SE X$\frac{1 \text{Z} r^2}{\sqrt{n}}$ =0.204

Probable Error of correlation coefficient X$0.6745 * \frac{1 \text{Z} r^2}{\sqrt{n}}$

= 0.1375

Independent Variable (Predictor): DY(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

$$= -212.338$$

$$a = \bar{y} - b\bar{x}$$

$$= 2276.88$$

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

$$= 440.140$$

Standard Chartered Bank Nepal Limited

Year	DY(X)	MPS(Y)	XY	X^2	Y^2
2004/05	6.88	1162	7994.56	47.3344	1350244
2005/06	5.04	1985	10004.4	25.4016	3940225
2006/07	4.66	2144	9991.04	21.7156	4596736
2007/08	6.45	1550	9997.5	41.6025	2402500
2008/09	6.70	1640	10988	44.89	2689600
2009/10	6.30	1745	10993.5	39.69	3045025
2010/11	5.11	2345	11982.95	26.1121	5499025
2011/12	3.44	3775	12986	11.8336	14250625
n = 8	$\sum X$ = 44.58	$\sum Y$ = 16346	$\sum XY$ = 84937.95	$\sum X^2$ = 258.5798	$\sum Y^2$ = 37773980

$\sum X$ = 44.58

$\sum Y$ = 16346

$\sum XY$ = 84937.95

$\sum X^2$ = 258.5798

$\sum Y^2$ = 37773980

Mean $\bar{x} = \frac{\sum X}{n}$

$$= 5.5725$$

Mean $\bar{y} = \frac{\sum Y}{n}$

$$= 2043.25$$

Coefficient of Correlation $r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}}$

$$= -0.922$$

Coefficient of Determination $r^2 = 0.8500$

Standard Error of correlation coefficient SE $= \frac{1 - r^2}{\sqrt{n}} = 0.053$

Probable Error of correlation coefficient $= 0.6745 * \frac{1 - r^2}{\sqrt{n}}$

$= 0.035$

Independent Variable (Predictor): DY(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

$$Y = a + bx$$

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b \sum X$$

$$\sum XY = a \sum X + b \sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n \sum XY - \sum X \sum Y}{n \sum X^2 - (\sum X)^2}$$

$= -605.46$

$a = \bar{y} - b\bar{x}$

$= 5417.175$

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}}$$

$= 329.4866$

Pooled Average

Year	DY(X)	MPS(Y)	XY	X^2	Y^2
2004/05	5.66	921	5212.86	32.0356	848241
2005/06	3.42	1621.5	5545.53	11.6964	2629262.25
2006/07	2.29	1573.5	3603.315	5.2441	2475902.25
2007/08	3.25	1011.25	3286.5625	10.5625	1022626.563
2008/09	4.04	1001.25	4045.05	16.3216	1002501.563
2009/10	4.19	1131.25	4739.9375	17.5561	1279726.563
2010/11	3.29	1442.5	4745.825	10.8241	2080806.25
2011/12	2.60	2098.75	5456.75	6.76	4404751.563
n = 8	$\sum X$ 28.74	$\sum Y$ 10801	$\sum XY$ 36635.83	$\sum X^2$ 111.0004	$\sum Y^2$ 15743818

$\sum X = 28.74$

$\sum Y = 10801$

$\sum XY$ = 36635.83

$\sum X^2$ = 111.0004

$\sum Y^2$ = 15743818

Mean $\bar{x} = \frac{\sum X}{n}$

=3.5925

Mean $\bar{y} = \frac{\sum Y}{n}$

=1350.125

Coefficient of Correlation $r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}}$

= -0.7222

Coefficient of Determination r^2 =0.5215

Standard Error of correlation coefficient SE $= \frac{1-r^2}{\sqrt{n}}$ =0.16917

Probable Error of correlation coefficient $= 0.6745 * \frac{1-r^2}{\sqrt{n}}$

=0.1141

Independent Variable (Predictor): DY(X)
Dependent Variable : MPS(Y)

Regression Equation of Y on x is

Y=a +bx

Where,
a =Regression Constant
b =Regression coefficient (slope of the regression line)
According to the principle of least squares two normal equation for estimating two numerical constant a & b are given by

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Solving these two normal equations we get,

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

=-279.38

$$a = \bar{y} - b\bar{x}$$

=2353.79765

Standard Error of the Estimate,

$$SE\ e = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

= 304.313

Appendix-VI

Coefficient of multiple regressions of MPS on EPS and DPS of pooled average

Year	MPS($X_!$)	EPS(X_2)	DPS(X_3)	X_1^2	X_2^2	X_3^2	X_1X_2	X_1X_3	X_2X_3
2004/05	921	73.38	52.50	848241	5384.62	2756.25	67582.98	48352.5	3852.45
2005/06	1621.5	84.04	57.50	2629262.25	7062.72	3306.25	136270.86	93236.25	4832.3
2006/07	1573.5	78.22	41.87	2475902.25	6118.36	1753.09	123079.17	658882.44	3275.07
2007/08	1011.25	72.56	38.75	1022626.56	5264.95	1501.56	73376.3	39185.93	2811.7
2008/09	1001.25	80.74	45.33	1002501.56	6518.94	2054.80	80840.92	45386.66	3659.94
2009/10	1131.25	84.23	52.50	1279726.56	7094.69	2756.25	95285.18	59390.62	4422.07
2010/11	1442.5	83.56	55.62	2080806.25	6982.27	3093.58	120535.3	80231.85	4647.60
2011/12	2098.5	97.84	63.75	4403702.25	9572.66	4064.06	205317.24	133779.37	6237.3
n=8	X_1 = 10800.75	X_2 = 654.57	X_3 = 407.82	X_1^2 = 15742768.68	X_2^2 = 60981.48	X_3^2 = 21285.84	X_1X_2 = 902287.95	X_1X_3 = 565445.62	X_2X_3 = 33738.43

Mean $\overline{X}_1$=1350.09 $\overline{X}_2$=81.82 $\overline{X}_3$=50.97

Dependent Variable: MPS (Say X_1)

Independent Variable (Predictors): EPS (SayX_2) and DPS (Say X_3)

The general form of multiple regression equation applicable in given case is:

$$X_1 = a_1 + b_1.X_2 + b_2.X_3 \ldots\ldots\ldots\ldots (1)$$

Where, a = Regression constant

$b_1$and b_2 = Coefficients of Net Regression (or simply, Regression Constants)

Required normal equations to fine the values of a_1, b_1 and b_2 can be written as under:

$$X_1 = n.a_1 + b_1.\ X_2 + b_2.\ X_3 \ldots\ldots\ldots\ldots\ldots\ldots (i)$$

$$X_1X_2 = a_1.\ X_2 + b_1.\ X_2^2 + b_2.\ X_2X_3 \ldots\ldots\ldots (ii)$$

$$X_1X_3 = a_1.\ X_3 + b_1.\ X_2X_3 + b_2.\ X_3^2 \ \ldots\ldots\ldots \text{(iii)}$$

Substituting the corresponding values and solving these equations for b_1, b_2 and a_1, we get:

$a_1 = -221.41$ $b_1 = 1.047$ $b_2 = 29.147$

Hence, the required multiple regression equation is as follows:

$$\hat{X}_1 = -221.41 + 1.047\ X_2 + 29.147\ X_3$$

Standard Error of Estimate of X_1 on X_2 and X_3 is given by,

$$S_{1.23} = \sqrt{\frac{X_1^2\ Z a_1 \quad X_1\ Z b_1 \quad X_1X_2\ Z b_2 \quad X_1X_3}{n\ Z3}} = 376.71619$$

Appendix-VII
Coefficient of multiple determinations among MPS, EPS and DPS (of pooled average)

Year	MPS($X_!$)	EPS(X_2)	DPS(X_3)	$(X_1 - \bar{x}_1)$	$(X_1 - \bar{x}_1)^2$	$\hat{X}_1$	$(\hat{X}_1 - \bar{x}_1)$	$(\hat{X}_1 - \bar{x}_1)^2$	$X_1 - \hat{X}_1$	$(X_1 - \hat{X}_1)^2$
2004/05	921	73.38	52.50	-429.09	184118.228	1385.636	35.546	1263.518	-464.636	215886.6125
2005/06	1621.5	84.04	57.50	271.41	73663.388	1542.532	192.442	37033.923	78.968	6235.945
2006/07	1573.5	78.22	41.87	223.41	49912.028	1080.871	-269.219	72478.869	492.629	242683.33
2007/08	1011.25	72.56	38.75	-338.84	114812.54	-984.0065	-366.0835	134017.129	27.2435	742.208
2008/09	1001.25	80.74	45.33	-348.84	121689.3456	1184.358	-165.732	27467.095	183.108	33528.539
2009/10	1131.25	84.23	52.50	-218.84	47890.9456	1396.9963	46.9063	2200.2009	-265.7463	70621.095
2010/11	1442.5	83.56	55.62	92.41	8539.6081	1487.233	137.143	18808.202	-44.733	2001.041
2011/12	2098.5	97.84	63.75	748.41	560117.57	1739.149	389.059	151366.9055	359.351	129133.141
n=8	X_1 X 10800.75	X_2 X 654.57	X_3 = 407.82	$(X_1 - \bar{x}_1)$ X 0.03	$(X_1 - \bar{x}_1)^2$ = 1160743.238			$(\hat{X}_1 - \bar{x}_1)^2$ 444635.8369		$(X_1 - \hat{X}_1)^2$ = 700831.9115

Mean $\bar{X}_1$=1350.09 $\bar{X}_2$=81.82 $\bar{X}_3$=50.97

…Total variation = Total Sum of Square = SST = $(X_1 - \bar{x}_1)^2$ = 1160743.238

Explained variation = Regression Sum of Square = SSR = $(\hat{X}_1 - \bar{x}_1)^2$ = 444635.8369

and, Unexplained variation = $(X_1 - \hat{X}_1)^2$ = 700831.9115

The coefficient of multiple determinations is given by,

$$R^2_{1.23} = \frac{Explained Variation}{Total Variation} = \frac{SSR}{SST} = \frac{444635.8369}{1160743.238} = 0.38306$$

Appendix- VIII
Multiple Regression Analysis of MPS on DPR (%) and DPS (of Pooled Average)

Year	MPS($X_!$)	DPR(X_2)	DPS(X_3)	X_1^2	X_2^2	X_3^2	X_1X_2	X_1X_3	X_2X_3
2004/05	921	74.065	52.50	848241	5485.62	2756.25	68213.865	48352.5	3888.41
2005/06	1621.5	64.723	57.50	2629262.25	4189.06	3306.25	104948.34	93236.25	3721.57
2006/07	1573.5	43.923	41.87	2475902.25	1929.22	1753.09	69112.84	65882.44	1839.05
2007/08	1011.25	41.663	38.75	1022626.56	1735.80	1501.56	42131.70	39185.93	1614.44
2008/09	1001.25	46.49	45.33	1002501.56	2161.32	2054.80	46548.11	45386.66	2107.39
2009/10	1131.25	43.958	52.50	1279726.56	1932.30	2756.25	49727.48	59390.62	2307.79
2010/11	1442.5	56.19	55.62	2080806.25	3157.31	3093.58	81054.07	80231.85	3125.28
2011/12	2098.5	55.93	63.75	4403702.25	3128.16	4064.06	117369.10	133779.37	3565.53
n=8	X_1 = 10800.75	X_2 = 426.942	X_3 = 407.82	X_1^2 = 15742768.68	X_2^2 = 23718.79	X_3^2 = 21285.84	X_1X_2 = 579105.50	X_1X_3 = 565445.62	X_2X_3 = 22169.46

Mean $\overline{X}_1 = 1350.09$ $\overline{X}_2 = 53.36$ $\overline{X}_3 = 50.97$

Dependent Variable: MPS (Say X_1)

Independent Variable (Predictors): DPR (Say X_2) and DPS (Say X_3)

The general form of multiple regression equation applicable in given case is:

$$X_1 = a_1 + b_1.X_2 + b_2.X_3 \ldots\ldots\ldots\ldots (1)$$

Where, a = Regression constant

$b_1$and b_2 = Coefficients of Net Regression (or simply, Regression Constants)

Required normal equations to fine the values of a_1, b_1 and b_2 can be written as under:

$$X_1 = n.a_1 + b_1.\ X_2 + b_2.\ X_3 \ldots\ldots\ldots\ldots\ldots\ldots (i)$$

$$X_1X_2 = a_1.\ X_2 + b_1.\ X_2^2 + b_2.\ X_2X_3 \ldots\ldots\ldots (ii)$$

$$X_1X_3 = a_1.\ X_3 + b_1.\ X_2X_3 + b_2.\ X_3^2 \ldots\ldots\ldots (iii)$$

Substituting the corresponding values and solving these equations for b_1, b_2 and a_1, we get:

a_1=7.97 b_1= -15.62 b_2=42.68

Hence, the required multiple regression equation is as follows:

$$\hat{X}_1 = 7.97 - 15.62X_2 + 42.68X_3$$

Standard Error of Estimate of X_1 on X_2 and X_3 is given by,

$$S_{1.23} = \sqrt{\frac{X_1^{\,2}\,\mathrm{Z}a_1 \quad X_1\,\mathrm{Z}b_1 \quad X_1X_2\,\mathrm{Z}b_2 \quad X_1X_3}{n\,\mathrm{Z}3}} = 337.37$$

Appendix – IX
Coefficient of Multiple Determinations between MPS, DPR (%) and DPS (of Pooled Average)

Year	MPS($X_!$)	DPR (X_2)	DPS(X_3)	$(X_1 Z \bar{x}_1)$	$(X_1 Z \bar{x}_1)^2$	$\hat{X}_1$	$(\hat{X}_1 Z \bar{x}_1)$	$(\hat{X}_1 Z \bar{x}_1)^2$	$X_1 Z \hat{X}_1$	$(X_1 Z \hat{X}_1)^2$
2004/05	921	74.065	52.50	-429.09	184118.22	1091.77	-258.32	66729.22	-170.77	29162.39
2005/06	1621.5	64.723	57.50	271.41	73663.38	1451.09	101	10201	170.41	29039.56
2006/07	1573.5	43.923	41.87	223.41	49912.02	1108.90	-241.19	58172.61	464.6	215853.16
2007/08	1011.25	41.663	38.75	-338.84	114812.54	1011.04	-339.05	114954.90	0.21	0.0441
2008/09	1001.25	46.49	45.33	-348.84	121689.34	1216.48	-133.61	17851.63	-215.23	46323.95
2009/10	1131.25	43.958	52.50	-218.84	47890.94	1562.04	211.95	44922.80	-430.79	185580.02
2010/11	1442.5	56.19	55.62	92.41	8539.60	1504.14	154.05	23731.40	-61.64	3799.48
2011/12	2098.5	55.93	63.75	748.41	560117.57	1855.19	505.1	255126.01	243.31	59199.75
n=8	X_1 = 10800.75	X_2 = 329.352	X_3 = 407.82	$(X_1 Z \bar{x}_1)$ X 858.21	$(X_1 Z \bar{x}_1)^2$ = 1160743.23			$(\hat{X}_1 Z \bar{x}_1)^2$ = 591689.57		$(X_1 Z \hat{X}_1)^2$ = 568958.35

Mean $\bar{X}_1$=1350.09 $\bar{X}_2$ =41.169 $\bar{X}_3$=50.9775

…Total variation = Total Sum of Square = SST = $(X_1 Z \bar{x}_1)^2$ = 1160743.238

Explained variation = Regression Sum of Square = SSR = $(\hat{X}_1 Z \bar{x}_1)^2$ = 591689.57

and, Unexplained variation = $(X_1 Z \hat{X}_1)^2$ = 568958.35

The coefficient of multiple determinations is given by,

$$R^2_{1.23} = \frac{ExplainedVariation}{TotalVariation} = \frac{SSR}{SST} = \frac{591689.57}{1160743.23} = 0.5097$$