

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Dividend policy decision is one of the three decisions of financial management because it affects the financial structure, the flow of funds, corporate liquidating and investors' attitudes. The main aspect of dividend policy is to determine the amount of earning to be distributed the shareholder and the amount to be retained in the firm. Dividend policy involves the decision to pay out earning versus retaining them for reinvestment in the firm. The relationship between dividend and the value of the share is not clear-cut. The financial manager must understand the various conflicting factors, which influence the dividend policy before deciding the allocation of its company's earnings into dividends, and retain earnings. The policy followed by the firm should be suitable for both the shareholders as well as the firm itself. The dividend and retained earnings have reciprocal relationship. If the dividend is paid, retained earning decreases while if the profit is retained shareholders wealth is minimized.

After the restoration of democracy in 1990 A.D., 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 financial sector who contribute to build up economy of the country. Nepal is a country trying to develop its economy through global trend and cooperation with developed countries. The development of an economy requires expansion of productive activities, which in turn is the result of the capital formation, which is the capital stock of the country. The change in the capital stock of the country is known as investment. Investment is key factor for capital formation. Investment promotes economic growth and contributes to a nation's wealth. Investor desire to earn some return from the investment, without any return there is no any investment. Investment will block, if there is no return. The total expected return include two components one is capital gain and other is dividend. In the capital market, all firms operate in order to generate earnings. Shareholders make investment in equity capital with the expectation of making earning in the form of dividend or capital gains. Thus, shareholders wealth

can increase through either dividend or capital gain. Once the company earns a profit, it should decide on what to do with the profit. It could be continued 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. Dividends are payment made to stockholders from a firm's earning in return to their investment. Dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained or reinvestment in the firm. The objective of a dividend policy should be to maximize shareholder's wealth position. Retained earnings are used for making investment in favorable investment opportunities, which in turn help to increase the growth rate of the firm. What and how much it is desirable to pay dividend is always a controversial topic because shareholders expect higher dividend from corporation, but corporation ensure towards setting aside funds for maximizing the overall shareholders' wealth. Management is therefore concerned with the activities of corporation that affect the well-being of shareholders. That well-being can be partially measured by the dividend received, but a more accurate measure is the market value of stock. However, stockholders think dividend yield is less risky than capital gain. Dividends are payments made by a corporation to its shareholders. It is the portion of corporate profits paid out to stockholders. When a corporation earns a profit or surplus, that money can be put to two uses: it can either be re-invested in the business i.e. retained earnings, or it can be paid to the shareholders as a dividend. Many corporations retain a portion of their earnings and pay the remainder as a dividend. The most widely accepted objective of a firm is to maximize the value of the firm and to maximize shareholder wealth. In general, there are three types of financial decisions, which might influence the value of a firm: investment decisions, financial decisions and dividend decisions. These three decisions are interdependent in a number of ways. The investments made by a firm determine the future earnings and future potential dividends; and dividend policy influences the amount of equity capital in a firm's capital structure and further influences the cost of capital. In making these interrelated decisions, the goal is to maximize shareholder wealth. Dividends are decided upon and declared by board of directors. A firm's profits after-tax can either be used for dividends payment or retained in the firm to increase shareholders' fund. This may involve comparing the cost of paying dividend with the cost of retaining earnings. Generally, whichever component has a lower cost that is where the profit after-tax will flow. However, there is a need to strike for a balance because it is a zero sum decision.

Every firm after making profit either retain the money for further investment of distribute it among the shareholders. The profit made by the firm, which is distributed to the shareholders is termed as dividend. The firm should decide whether to keep the money as retained earnings or pay the dividend. The dividend policy is the policy followed by the firm regarding the dividend verses retention decision. It is not necessary that all business organization follow the same dividend policy. Dividend policy of different organization may be same or different. But, the policy followed by the firm should be suitable for both the shareholders as well as the firm itself. The dividend and retained earnings have reciprocal relationship. If the dividend is paid, retained earning decreases while if the profit is retained shareholders wealth is minimized.

1.2 Focus of the Study

The study is focused at assessing the prevailing practices of Nepalese Commercial banks regarding dividend. For that the study will concentrate on impact of dividend on market price of stock and only the cash dividend is include for the study. The externalities are not including for the study. And assessment of the effect of dividend decision on the market price of stock.

1.3 Statement of the Problems

Shareholders make investment in equity capital with the expectation of increasing their wealth. Dividend is a kind of earning that the shareholders expect from their investment. But the dividend decision is still a fundamental as well as controversial area of managerial function. The effect of dividend policy on market price of share is a subject of long standing arguments. However, still there is no single conclusive result regarding the relationship between dividend payment and market price of the share.

There is no controversy that when a firm gets much earning, then the shareholders would expect much dividend. However, earnings are also treated as financial sources for the firm. If the firm retains the earnings are also treated as financing sources for the firm, if the firm retains the earnings, its repercussion can be seen in many factors such as decreased leverage ratio, expansion of activities and increase in profit in

succeeding years whether if the firm pays dividends, it may need to raise capital through capital market which may dilute the ownership control of existing shareholders. If the firm takes loan or raise debenture, it will effect on risk characteristics of the firm. Therefore, there are many dimensions be considered on dividend theories, policies and practices.

The capital market is an important part of corporate development of a country. Even through the capital marketer is in the early stage of development in Nepal, Nepalese investors have heavily made investment on newly established companies, especially in financial sector. This trend will remain to continue until the investors are satisfied by the decision made by the management of the companies. Dividend is most inspiring aspect for the investment in the shares of various companies for an investors, Even if dividend affect the firm's value, unless management knows exactly how they affect value, there is not much that they can do to increase the shareholder's wealth. Therefore, it is necessary for the management to understand how the dividend policy affects the market value of the firm or market price of the stock or the wealth position of the shareholders.

Thus, this study seeks to answer the following question:

- What are the prevailing practices of the HBL, LBL, BOK, SCBL and NIBL regarding their dividend policy?
- What is the reason behind stock price increasing after the announcement of the dividend?
- What are the implications of dividend on market price of share?
- What are the Problems of increasing market price of the stock by changing dividend payout ratio?
- Is there any consistency in EPS, DPS, MPS and DPR?
- What does the dividend decision affect the stock price of the Company?

1.4 Objectives of the Study

The major objective of the study is to obtain in – depth knowledge about the impact of dividend policy adopted by the selected companies to its market price of shares and the overall valuation of the firms. Other specific objectives are:

- To highlight the prevailing dividend policy adopted by the listed companies.
- To analyze, examine and interpret the stock price movement after announcing the dividend decision by the listed Commercial Banks.
- To analyze the various such as profit, dividend per share, dividend payout ratio, dividend yield and other relevant variable to show the relationship between the market value and the ingredients affecting it.

1.5 Significance of the Study

Dividend is a source of return to shareholders. Shareholders invest in share for the purpose of getting high return and maximize their wealth position. The dividend policy is an effective way to attract new investors, retain existing investors and make them happy as well as to maintain the goodwill and desired controlling power in the management of the firm.

In Nepal, due to lack of enough knowledge, people are investing haphazardly in the shares. There is not adequate research conducted so far to improve the situation. Hence, it is necessary to establish clear conception about the return resulting from investing in the stock, this thesis will help to overcome this gap to some extent and has considerable importance. It is aimed at providing important information to the investors and respective firms that are taken as sample. The importance of the study can be pointed out as follows:

- This research work will provide vital information about the impact of dividend on market price.
- This study will make suggestion and recommendation that will be helpful for further researchers, investors.
- This study will help management and policy maker in setting and making a suitable dividend policy.
- This study may be useful to government for policy making, controlling and monitoring.

1.6 Limitations of the Study

The limitations of the study are:

- The study is carried out only five years of trend of commercial banks.
- This study uses these secondary data. It is collected from the annual report of concerned banks. And it may represent the population.
- HBL, LBL, BOK, SCBL and NIBL banks are collected for the study.
- The study focuses only on dividend aspect of bank's performance.
- Among the different aspect of dividend policy, only cash dividend is taken for the analysis.
- Due to the annual distribution practice in Nepal, dividend has not been considered for calculation of holding monthly periodic return.
- Out of different factors affecting market price of the share, only those factors related with dividend policy are considered.

1.7 Organization of the Study

This study report has five section including Introduction, Review of Literature, research Methodology, Data Presentation and Analysis and summary, Findings Conclusion and Recommendation.

Chapter-I: Introduction

First chapter deals with the background of the study, focus of the study, statement of problems, objectives of the study, limitation of the study and scheme of the study.

Chapter-II: Review of literature

Second chapter includes come relevant literature available on the subject matter of the study; it consist of literature on emergence of concept of dividend policy from the review of books, articles and thesis related to the study field.

Chapter-III: Research Methodology

This chapter contains framework and procedure of the study, it deals with research methodology used to carry out the research, it includes research design, population and sample, sources and techniques of data collection, tools and techniques of data analysis.

Chapter-IV: Data Presentation and Analysis

This chapter is heart of the study. This chapter contains presentation of data, their analysis and interpretation using financial and statistical tools such as financial indicators and variables analysis, simple regression analysis, correlation coefficient analysis etc.

Chapter-V: Summary Conclusion and Recommendation

Last page deals with the suggestion, which includes the summary of the main findings conclusion of the study and recommendation.

Finally, appendices contain list of bibliography, copies of different sheets having information required for the study and dig gerent basic calculations.

CHAPTER II

REVIEW OF LITERATURE

In this chapter, review of concepts relating to profit planning and control and previous studies have been presented. Such reviews provide the conceptual foundation for the study. Therefore, this chapter is divided into three parts, viz.

- Theoretical review.
- Review of Related studies.
- Review of Legal Provisions.

2.1 Theoretical Review:

2.1.1 Concept of Dividend

It is the first part of review of literature. This review consists of theoretical review from textbook, reference books and practice in dividend policy and its impact on market price of stock.

“The functions of finance involve three major decisions a company must make the investment decision, financing decision and the dividend decision. Each must be considered in relation to firm’s objectives; an optimal combination of the three will create value”. (*Van Horne, 2004; 303*)

Dividend refers to a portion of earning, which is distributed to shareholders in return of their investment in share capital. It is the periodic payment made to the shareholders to compensate them for the use of and risk to their investment. The important aspect of dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained in the firm. Retained earnings are the most significant sources of financing the growth of the firm. On the other hand, dividends may be considered desirable from shareholder’s point of view, as they tend to increase their current wealth.

Dividend policy refers to the policy, which segments the earnings to retained amount of dividend. Dividend policy determines the ratio of earnings to be retained and pay out. As the dividend payment and retained earnings have inverse relationship, all the

problems regarding dividend payment and retention of earnings is closely examined before applying appropriate dividend policy. Higher dividend payout reduces the retention amount, which affects the internal financing on the other hand lower dividend payout affects market price of stock. The decision regarding dividend payment depends upon the objectives of the firm.

Most of the investors expect dividend to continue in each year as well as to receive price when they sell the stock. The expected final stock price includes the returns of the original investment plus a capital gain. If the stock is actually sold at price above its purchase price, the investor will receive a capital gain as such the shareholders expect an increase in market value of the common stock over time. At the same time, they also expected firm's earning in a form of dividend. Therefore, the shareholders may satisfy with dividend or capital gain. Financial manager is therefore concerned with the activities of corporation that affect the well being of stakeholders. That well being can be partially measured by dividend received but a more accurate is the market value of stock.

“The firm's decision to pay dividends may be shaped by two possible viewpoints. When dividend is treated as financing decision, the net earnings of the firm may be considered as a source of long-term funds. With this approach, dividend will be paid only when the firm does not have profitable investment opportunities. On the other hand, because of market imperfections and uncertainty, shareholders may give a higher value to the near dividends than the future dividend and capital gains. Thus, the payment of dividend may significantly affect the market price of the share. Higher dividends increase the value of the shares and low dividends reduces the price of share. In order to maximize wealth under uncertainty, the firm must pay enough dividends to satisfy investors”. (*Gitman, 1985; 1*)

2.1.2 Forms of Dividend

Generally, dividend is paid in cash but when the company is unable to pay cash dividend they use different forms of dividend payment for satisfying stockholders. Such forms of dividends are stock dividend, script dividend, bond dividend etc. but in Nepalese context, most of the companies are paying cash and stock dividend.

i) Cash Dividend

Cash dividend is one of dividend, which is distributed to shareholders in forms of cash out of company's profit. "The cash account and the reserve account of a company will be reducing when the cash dividend is paid. Thus, the total assets and net worth of the company are reduced when the cash dividend is paid. Thus, the total assets and net worth of the company are reduced when cash dividend is distributed. The market price of the share drops in most cases by the amount of the cash dividend distributed". (*Pandey, 1995; 695*)

ii) Stock Dividend

If additional shares are issued to existing shareholders instead of cash dividend, it is known as stock dividend. A stock dividend represents distribution of shares in addition to the cash dividend to the existing shareholders. This has the effect of increasing the number of outstanding share of the company. The shares are distributed proportionately. Thus, the shareholders retain their proportionate ownership of the company. The declarations of bonus share increases the paid-up share capital and reduce the reserves and surplus of the company. The issue of bonus shares does not affect the total net worth.

iii) Script Dividend

A dividend paid in promissory notes is called script dividend. Script dividends are those paid in company's promise to pay instead of cash. When earning of the company justify dividends but the company's cash position is temporarily weak and does not permit cash dividend, it may declare dividend in the form of script. Script dividend may bear a definite maturity date or it may be left to the directors. Such dividends may be interest bearing or non-interest bearing.

iv) Property Dividend

If payment of dividend made in the form of property rather than cash than it is called property dividend. This form of dividend may be followed when there are assets that are no longer necessary in operation of the business or in extra ordinary

circumstances. Companies' own products and securities of subsidiaries are the examples that have been paid as property dividends.

v) Bond Dividend

Bond Dividend is a dividend that is distributed to the shareholders in form of bond. When the company generates more profit for a long time, it is better to issue a bond, which carries certain interest rate. In other words, it is better to issue a bond, which carries certain interest rate. In other words, corporation declares dividend in form of its own bond with a view to avoid cash out

2.1.3 Theories of Dividend

There are two theories of dividend, which are presented below.

Residual Theory of Dividend

Stability Theory of Dividend

2.1.3.1 Residual Theory of Dividend

According to one school of thought, the residual theory of dividends suggests that the dividend paid by a firm should be viewed, as a residual amount left after all acceptable investment opportunities have been undertaken. Dividend policy can be viewed as one of firm's investment decision. A firm that behaves in this manner is said to believe in the residual dividends. According to this theory, dividend policy is a residue after investment whether or not a company pays dividends depends on the availability of investment opportunity.

The starting point in this theory is that investors prefer to have the firm retain and reinvest earning, instead of paying dividends, if the return on reinvestment is higher than the opportunity cost of fund for the investors. The dividend under residual dividend policy equals the amount left over from earning after investment, no dividends are paid and no shares are sold to cover deficit for investment that is not covered. If there is not any investment opportunity then cent percent earning is

distributed as dividend to the shareholders. Dividend is therefore merely a residue i.e. percent remaining after all equity investment needs are fulfilled.

As long as there are investment projects with higher returns, the firm retains the earnings to invest in such profitable projects rather than paying dividends. The firm grows at a faster rate when it accepts highly profitable investment projects. External equity could be raised to finance investments. However, the retained earnings are preferable because unlike external equity, they do not involve any flotation costs. The distribution of cash dividend causes a reduction in internal funds available to finance profitable investment opportunities and thus, either constrain growth or require the firm to find other costly sources of financing. Thus, earnings may remain undistributed as a part of a long-term financing decision. The dividend paid to shareholders represents a distribution of earnings that cannot be profitably reinvested by the firm with this approach; dividend decision is viewed merely as a residual decision.

2.1.3.2 Stability Theory of Dividend

Dividend stability refers to the consistency in stream of dividend. In other words, stability of dividend means regularity in paying dividend even though the amount of dividend may fluctuate from year to year. "Stability of dividends is considered as a desirable policy by the management of most companies. Shareholders also generally favor this policy and value stable dividends higher than the fluctuating ones. All other things being the same, stable dividend may have a positive impact on the market price of the share".(Panday, 1995; 695)

By stability, we mean maintaining the position of the firm's dividend payments in relation to a trend line, preferably one that is upward sloping. There are some reasons to believe that a stable dividend policy does lead to higher stock prices. First, investors are generally expected to value more highly dividends they are sure of receiving, since fluctuating dividends are riskier than stable ones. Accordingly, the same average amount of dividend received under a fluctuating dividend policy is likely to have a higher discount factor applied to it than is applied to dividends under a stable dividend policy. This means that the company with stable dividend policy will have a lower required rate of return or cost of equity capital than one whose

dividend fluctuates. Second, many stockholders live on income received in the form of dividends. These stockholders are greatly inconvenienced by fluctuating dividends and they will pay a premium for a stock with a relatively assured minimum dollar dividend. Third, from the stand point of both the corporation and its stockholders is that, stability of dividend is desirable for the requirement of legal listing.

There are three distinct forms of such stability of dividend payments. They are:

- i. Constant Dividend Per Share
- ii. Constant Dividend Payout Ratio
- iii. Low Regular Dividend Plus Extra Dividend

i. Constant Dividend Per Share

“The policy of constant dividend per share follows a policy of paying a certain fixed amount per share as dividend every year irrespective of the fluctuations in the earnings. This policy does not imply that the dividend per share or dividend rate will never be increased. When a company reaches new level of earnings and expects to maintain it, the annual dividend per share may be increased”. (*Panday, 1995; 702*)

It is easy to follow this policy when earnings are stable. If the earning pattern is widely fluctuated, it is difficult to maintain such a policy.

The dividend policy of paying a constant amount of dividend per year treats ordinary shareholders somewhat like preference shareholders without taking into account the firm's or shareholders investment opportunities. Those investors who have dividends as the only source of their income prefer the constant dividend policy. They are hardly concerned about the changes in share prices. In the long-run, such behavior helps to stabilize the market price of the share

ii. Constant Dividend Payout Ratio

The ratio of dividend to earning is known as payout ratio. Some companies may follow a policy of constant payout ratio, i.e. paying a fixed percentage of net earnings

every year. With this policy, the amount of dividend will fluctuate in direct proportion to earnings.

“This policy is related to company’s ability to pay dividends. If the company incurs losses, no dividends shall be paid regardless of the desires of shareholders. Internal financing with retained earnings is automatic when this policy is followed. At any given payout ratio, the amount of dividends and additions to retained earnings increases with increasing earnings and decreases with decreasing earnings. This policy simplifies the dividend decision, and has the advantage of protecting a company against over or under payment of dividend. It ensures that dividends are paid when profits are earned and avoided when it incurs losses” (*Brealy, 1981; 448 449*)

iii. Low Regular Dividend Plus Extra Dividend

According to this policy, the company pays fixed amount of stable dividend to the shareholders to reduce the possibility of ever missing dividend payment and in years of market prosperity, additional dividend is paid over and above the regular dividend. When normal condition returns, the company cuts the extra dividend and returns in its normal dividend payment. This types of a policy enables a company to pay constant amount of dividend regularly without default and allows a great deal of flexibility for supplementing the income of shareholders only when the companies earning are higher than the usual, without committing itself to make large payments as a part of the future fixed dividend.

2.1.4 Factors Influencing Dividend Policy

A firm’s dividend policy is influenced by a large number of factors. Some factors affect amount of dividend and some others affect types of dividend. Legal provision, Firm’s liquidity position, need to repay debt, restrictions imposed by debt holders, expected rate of return, stability of earnings, shareholder’s personal tax etc., are the major factors affecting dividend policy, which are described below:

1. Legal Requirements

There is no-legal compulsion on the part of a company to distribute dividend. However, there are certain conditions imposed by law regarding the way of distributing dividend. Basically, we find the following three rules relating to dividend payment.

i) The Net Profit Rule

The net profit rule states that dividends can be paid out of present or past earnings. However, it should be recognized that dividends greater than the sum of current earnings and past accumulated earnings could not be made. Similarly, if there is past accumulated losses the current earnings must be set aside to cut off the accumulated losses before the pay out of any dividends.

ii) The Capital Impairment Rules

This rule states that the firm cannot pay dividend out of its paid up capital, because it adversely affects the firm's equity base threatening the position of creditors. The basic idea behind this rule is to protect the claim of creditors by maintaining sufficient equity base. The dividend payout that impairs capital is considered to be illegal and directors are personally held responsible for such illegal dividend payments.

iii) Insolvency Rule

If a firm's liabilities exceed the assets or if the firm is unable-to pay its current obligations, the firm is considered to be insolvent. If the firm is insolvent, it is strictly prohibited by law to pay dividends. The basic idea behind this rule is to protect the interest of the creditors, which may otherwise results from the liquidation of company if it would bankrupt.

2. Firm's Liquidity Position

Dividend payout is also affected by the firm's liquidity position. No matter firm's balance sheet shows sufficient retained earnings, they are not held in cash, rather they

are reinvested into firm's assets. Because of this, the firm may not be able to pay cash dividends.

3. Repayment Need

Firm uses several form of debt financing for satisfying its investment needs. These debts are to be repaid at the maturity. The firm has generally two alternatives regarding the repayments of debt: either it can issue alternative securities to repay the existing debt at maturity or it can make provision out of its earnings for the purpose of repayment. Therefore, if firm has to retain profits for the purpose of repaying debt at maturity, the dividend payment capacity of the firm reduces.

4. Restriction Imposed by Debt Holders

Debt holders may impose certain restrictions upon the firm regarding dividend payment. The restrictions may be such that the firm is prohibited to pay dividend out of past retained earnings in the book of company before performing such debt contract, or the firm may be restricted by its preferred stock holders to pay any dividends on common stock unless and until the firm pays its entire accrued dividend on preferred stock.

5. Expected Rate of Return

The quantum of dividend payment also depends on the expected rate of return on the investment. If a firm has relatively higher expected rate of return on its investment, the firm prefers to retain the earning for reinvestment rather than distributing cash dividends.

6. Stability of Earning

If a firm has relatively stable earnings it is more likely to pay relatively larger dividend than a firm with relatively fluctuating earnings. The firm with unstable earnings is relatively uncertain about its future earnings so that it prefers to retain more from current earnings.

7. Desire for Control

When the needs for additional finance arise, the existing management of the firm may not prefer to issue additional common stock because of the fear of dilution in control on management of the company. Similarly, additional debt financing may also not be preferred because of increase in financial risk so that firm prefers to retain more earnings to satisfy additional financing need.

8. Access to the Capital Markets

If a firm has easy access to capital markets in raising additional financing, it does not require keeping more retained earnings. However, smaller and newly established firms generally find difficulties in raising funds externally from the capital market; therefore they would have to rely heavily on internal sources of financing. As a result of this, they prefer not to make larger dividend payments.

9. Stockholders' Individual Tax Situation

For a closely held company, shareholders prefer relatively lower cash dividends because of higher tax to be paid. On dividend income, the stockholders in higher personal tax brackets for closely held companies prefer capital gain rather than dividend gains. However, for widely held corporations, stockholders might prefer larger dividends, as they are not high tax payers.

Only the above-mentioned things are not enough to determine a sound dividend policy. Other many insights and considerations have to be taken into account. Such are: change in government policies, prospects of future growth, maturity and age of corporations, informational content of dividend and so on.

2.2 Review of Major Studies

In this section of the chapter, an attempt is made to review the various studies of past researches relating to the dividend policy and market price of shares in financial management.

Modigliani and Miller's Hypothesis

Modigliani and Miller have provided the most comprehensive argument for the irrelevance of dividends. According to MM, Dividend policy of a firm is irrelevant, as it does not affect the wealth of the shareholders¹⁷. They hold that the value of the Firm depends on the earning power of the firm's assets, or its investment policy. When investment decision of the firm is given, dividend decision split of earnings between dividends and retained earnings is of no significance in determining value of the firm- According to them, the effect of dividend payments on shareholders' wealth is exactly offset by other means of financing.

The MM approach is based on the following critical assumptions:

- The firm operates in perfect capital markets where investors behave rationally, information is freely available to all and transactions and floatation costs do not exist. Perfect capital markets also imply that no investor is large enough to affect the market price of the share.
- Taxes do not exist, or there are no differences in die tax rates applicable to capital gains and dividends. This means investors value a rupee of dividend as much as a rupee of capital gains,
- The firm has fixed investment policy.
- Risks of uncertainty do not exist.

MM provide the proof in support of their argument in the following manner:

Step 1:

The market price of a share in 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,

$$P_0 = \frac{(D_1 + P_1)}{(1 + K_e)}$$

Where,

P_0 = Market Price at the beginning or at the Zero period.

k_e = Cost of equity Capital.

D_1 = Dividend per share to be received at the end of the period

P_1 = Market price of share at the end of the period

Step 2:

Assuming that the firm does not resort any external financing the market value of the firm can be computed as follows:

$$P_0 = \frac{(nD_1 + P_t)}{(1 + K_e)}$$

Where,

n = Number of share outstanding at the beginning period

Step 3:

If the firm's internal sources of financing are not sufficient to finance the new investment needs of the funds, in that case issuing the new share is the other alternative. Say n is the number of newly issued equity share at the end of year 1 at price p_1 , then

$$nP_0 = \frac{[D_1 + (n + D_n)P_1] - D_nP_1}{(1 + K_e)}$$

Step 4:

If a firm were to finance nil investment proposals, the total amount new shares issued would be given by,

$$D_nP_1 = I - (E - nD_1)$$

$$\text{Or } \Delta nP_1 = I + E + nD_1$$

Where,

$\Delta nP_1 =$ Amount raised from the sale of shares to finance the project

$I =$ Total amount of capital required for the project

$E =$ Earning of the firm during the period

$E - nD_1 =$ Retained Earnings

$nD_1 =$ Total dividend paid

Step 5:

If value of nP_1 is substituted from equation of step 4 into equation of step 3 then,

$$nP_o = \frac{[D_1 + (n + D_n)P_1] - (I - E + nD_1)}{(1 + K_e)}$$

$$\text{or, } nP_o = \frac{D_1 + (n + D_n)P_1 - I + E - nD_1}{(1 + K_e)}$$

$$\text{or, } nP_o = \frac{(n + D_n)P_1 - I + E}{(1 + K_e)}$$

Step 6:

There is no any role of dividend (D_1) in above equation. So Modigliani and Miller conclude that dividend policy is irrelevant and dividend policy has no effect on the share price.

In this way, according to Modigliani and Miler's study, it seems that under condition of perfect markets, rational investors, absence of tax discrimination between dividend income and capital gain, given the firm's investment policy is fixed, its dividend policy may have no influence on the market price of share. However, the view that dividend is irrelevant is not justified. The assumption of perfect capital market cost, transformation cost and the tax effect on capital gain are neglected by MM that is not

appropriate. The assumption “in a world without taxes” one critic satires; such a world is probable the moon or other planet in the universe.

Walter’s Study

Professor James E. Walter argues that the choice of dividend policies almost always affect the value of the enterprise. The approach developed by Prof. Walter is considerable interest. Walter conducted a study on dividend and stock price in 1966.

The main point which he emphasizes is that there is a significant relationship between the internal rate of return and cost of capital and determining factors to retain profit or distribute dividends. As long as, the internal rate is greater than the market rate the stock price will be enhanced by retention of earnings and will inversely affected by dividend payout.

Walter’s model is based on following assumptions:

- The firm finances all investment through retained earnings; that is debt or new equity is not issued,
- The firm’s internal rate of return and its cost of capital are constant.
- All earnings are either distributed as dividend or reinvestment internally immediately.
- Beginning earnings and dividends never changes. The value of the earnings per share (EPS) and the dividend per share (DPS) may be changed in the model to determine the results, but any given values of EPS or DPS are assumed to remain constant forever in determining given value.
- The firm has a very long or infinite life.

He insists on the fundamental premises that stock prices over the long period reveal the present value of the expected dividends. The retained earnings affect stock prices in consideration of their impact on future dividends. Operation on the objectives of maximizing the wealth position of the ordinary shareholders, the appropriate dividend payout is suggested by following formula.

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

Where,

P = Market price per share

DPS = Dividend per share

EPS = Earning per share

R = internal rate of return (average)

K = cost of capital or capitalization rate

According to Walter's model, the optimal dividend policy depends on the relationship between the firm's internal rate of returns, r , and its cost of capital, k , Walter's view on the optimum dividend payout ratio can be summarized as follows.

Growth Firms ($r > k$):

Growth firms are those firms, which expand rapidly because of ample investment opportunities yielding returns higher than the opportunity cost of capital. These firms are able to reinvest earnings at a rate, which is higher than the rate expected by shareholders. They will maximize the value per share if they follow a policy of retaining all earnings for internal investment. Thus, optimum payout ratio for the growth firm is zero. The market value per share P increases as payout ratio declines when $r > k$.

Normal Firms ($r = k$)

Most of the firm do not have unlimited surplus-generating investment opportunities, generating returns higher than the opportunity cost of capital. After having exhausted such profitable opportunities, this firm earn on their investments' rate of return equals to the cost of capital. $r = k$. For the normal firms with $r = k$, the dividend policy has not effect on the market value per share in this model. 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 ($r < k$):

Some firms do not have any profitable investment opportunities to invest the earnings. Such firms would earn on their investment rates of return less than the minimum rate required by investors. Investors of such firm would like earnings to be distributed to them so that they may either spend if or invest elsewhere to get a rate higher than earned by the declining firms. The market value per share of declining firm with $r < k$ will be maximum when it does not retain earnings at all. Thus, the optimum payout ratio for a declining firm is 100 percent. P increases as payout ratio increases when $r < k$.

Thus, in Walter's model, the dividend policy of the firm depends on the availability of investment opportunities and the relationship the firm's internal rate of return and its cost of capital. The firm should use earnings to finance investments if $r > k$; should distributed all earnings when $r < k$ and would remain indifferent when $r = k$. Thus, dividend policy is a financing decision. When dividend policy is treated as a financing decision, the payment of cash dividends is a passive residual.

Limitation of Walter's Model

Walter's model is quite useful to show the effects of dividend policy on an all equity firms under different assumptions about the rate of return. However, the simplified nature of the model can lead to conclusions, which are not true in general, through true for the model. Following are the limitation of the model:

No External Financing

Walter's approach assumes that retained earnings finance the investment opportunities of the firm only and no external financing debt or equity is used for the financing. When such a situation exists, either the firm's investment or its dividend policy or both will be sub optimum. This means, when the firm's earnings are not adequate to exploit all investment opportunities having return at least equal or more than cost of capital, this approach does not allow financing the gap by using other sources.

Constant r and k

Walter's approach is based on the assumption that r and k are constant. In fact, r decreases as more investment occurs and k changes directly with the firm's risk. Walter's model may not be applicable in case of Nepalese company because in the other assumption also i.e., EPS and DPS are constant.

H.K. Baker, G.E. Farrelly and Richard B. Edelman's Study

H.K. Baker, G.E. Farrelly and Richard B. Edelman surveyed management view on dividend policy. They asked cooperative financial managers what they considered most important in determining their firm's dividend policy. The objectives of their survey were as follows:

- To compare the determinants of policy today with Linter's behavioral model of corporate dividend policy and to assess management's agreement with Linter's findings.
- To examine management's perception of signaling and clientele effect and
- To determine whether managers in different industries share similar views about the determinants of dividend policy.

The firms they surveyed were listed, on the New York Stock Exchange and classified four digit standard industrial classification codes. Total of 562 NYSE firms were selected from three industrial groups. Utility (150), Manufacturing (309) and wholesale/retail (103).

They mailed questionnaire to obtain information about corporate dividend policy. The questionnaire consisted of three parts (i) 15 close ended statements about the importance of various factors that each firm used in determining its dividend policy, (ii) 18 closed ended statement about theoretical issues involving corporate dividend policy, and (iii) a respondent's profile including such items as the firm's dividends and earnings per share. They send the final survey instrument to the chief financial officer of 562 firms followed by a second complete mailing to improve the response rate and reduce potential non-response bias. Their survey yielded 318 usable responses (i.e. 56.6%), which were divided among the three industry group as

follows: 114 utilities (76%), 147 manufacturing firms (47.6%), and 57 wholesale and retail (5.3). based on dividend and earnings per share data provided by the respondents, the average dividend payout ratios were computed. They found that payout ratio of the responding utilities (70.3%) were considerably higher than for manufacturing (36.6%) and wholesale/retail (36.1%).

The results of their survey on the aspect of determinants of dividend policy were as follows.

- The first highly ranked determinants are the anticipated level of firm's future earnings and the second factor is the pattern of the past dividends. They found the high ranking of these two factors is consistent with Linter's findings.
- A third factor cited as important in determining dividend policy is the availability of cash.
- A fourth determinant is concerned about maintaining or increasing stock price. They found this factor is particularly strong among utilities that ranked this second in importance.

Similarly, the results of their survey on the aspect of attitudes of theoretical issues were as follows:

- Respondents from all three industry groups agreed relatively strongly that dividend payout affects common stock prices.
- The respondents from all three industry groups agreed, on average, that dividend payouts provide a signaling device of future company prospects and that the market used dividend announcements as information for assessing security value.
- The respondents also demonstrated a high level of agreement that the reason for dividend policy changes should be adequately disclosed to investors.
- Respondents from all three industry groups thought that investors have different perceptions of the relative riskiness of dividends and retained earnings and hence are not indifferent between dividend and capital gain returns.

2.3 Legal Provisions Regarding Dividend Practice in Nepal

Nepal Company Act-1997 makes some legal provisions for dividend payment in Nepalese firms / organizations. These provisions are as follows.

Section 137 is regarding bonus share and sub- section (1) states that the Company must inform the office before issuing bonus shares under sub section (1). This may be done only by passing special resolution by the general meeting.

Sub-Section (1): Except in the following circumstances, dividends shall be distributed among the shareholders within 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 within the time limit mentioned above owing to circumstances beyond anyone's control and without any fault on the part of the company.

Sub Section (2): In case the dividends are not distributed within the time limit mentioned in sub- section (1), this shall be done by adding interest at the prescribed rate

Sub-Section (3): Only the person whose name stands registered in the register of existing shareholders at the time of declaring dividends shall be intended to it.

The above mentioned sections and sub- sections of company Act.-1997 indicates that the repurchase of own stock is not permitted to Nepalese company. The sections only speak about bonus share issues. This Act is not enough regarding dividend policy.

Nepal Government Decision Regarding Dividend Payment by the Government Corporations (June 14, 1998)

HMG on June 14, 1998 has decided some dividend payments aspect for government corporations. The decisions are as mentioned below;

- Dividend should be paid in profitable years. Though there are cumulative losses, dividend is to be paid in cash flow is sufficient to distribute dividend.
- In case of un-audited accounts, interim dividend should be paid on the bases of provisional financial statement.
- Dividend rate will not be less than the interest rate on fixed deposit of commercial bank, which is owned by government. In case of insufficiency of profit to distribute in above mentioned rate, concerned corporation should send proposal of new rate of dividend to the Finance Ministry through Unison ministry and should do what so ever decision is given thereof.
- The decision regarding distribution of annual distribution of annual net profit shall not be made without prior acceptance of Finance Ministry. All incentives, except those to be paid by law, shall not be distributed unless the amount of dividend is not paid to government.
- Those corporations operating monopoly situation should repay all amounts of profits to government except the amounts of bonus, tax and the amount needed to expand and develop the business. The amount separated for expansion and development of business will not be more than profit for the year and this amount should not be more than total paid up capital. The entire amount kept aside for above provision should be paid as dividend if is not used within three years.
- Concerned BOD and top management will be responsible for implementation of these dividend policies.
- Ministry of Finance shall make necessary' arrangement regarding fixation of dividend percentage by coordinating all concerned corporation and ministries.

The above stated HMG decision is solely concerned to the dividend decision of government owned corporations and does say nothing about other privately owned companies.

2.4 Review of Empirical Works

Since Nepalese capital market is small, and at emerging stage, there are very few studies regarding corporate dividend policy and its impact on share price. Here is the review of research work in Nepalese perspective.

A study done by **Mr. M.K. Shrestha**, entitled with “*Dividend performance of some public enterprises*” has following objectives and findings:

Objectives:

- Nepal Government expects two things from public enterprises: (i) They should be in a positive to pay minimum dividend and (ii) Public enterprises should be self supporting in financial matters in future years to come but none of these two objectives are achieved by public enterprises.

Findings:

- The article points the irony about government biasness that government has not allowed banks to follow independent dividend policy and Nepal Government is found to pressurize dividend payment in case of Nepal Bank Ltd. Regardless of profit. But it has allowed Rastriya Banijya Bank to be relieved obligation in spite of considerable profit.

A study done by **Mr. Radhe S. Pradhan**, entitled with “Study on stock market behavior in a small capital market” is a popular case study based on the data collected from 17 enterprises from 1986 through 1990.

The objectives of the study are:

- To assess the stock market behavior in Nepal,
- To examine the relationship of market equity, market value to book value, price earning and dividend with liquidity, profitability, leverage assets turnover and interest coverage.

Some Findings of his study, among others were as follows:

- Higher earning on stock leads (lie larger of DPS)
- Stock with larger ratio of dividend per share to market price have lower leverage ratio
- Positive relationship between the ratios of DPS to market price and interest coverage

- Positive relationship between dividend payout and turnover ratios
- Positive relationship between dividend payout and liquidity
- Positive relationship between dividend payout and profitability
- DPS and MFS are positively correlated
- Liquidity and leverage ratios are more variable for the stock paying lower dividends.
- Earnings, assets turnover, and interest coverage are more variable for the stock paying higher dividends.

A study done by **Mr. K.D. Manandhar**, entitled with “*Relationship of dividend payout*” describes about the relationship of dividend payout other financial factors based on the data of 7 commercial banks, 5 finance and insurance companies, 2 trading companies, 2 service oriented companies and 1 manufacturing company for the year 1987 to 1988.

Following are the major findings of his study:

- Significance relationship s found been change in dividend policy in terms of dividend per share and change in lagged earnings.
- There is relationship between distributed lagged profit and dividend.
- The difference is found significant between overall proportion of change dividend and due to increase and decrease in EPS during the study period.
- In overall increase in EPS has resulted to increase in the dividend payment in 66.6% of the cases while decrease in EPS is resulted decrease in dividend payments to come to 33.3% of the cases.
- It is found that Nepalese Corporate firms have followed the practice of maintaining constant dividend payment per share or increase it irrespective of change in EPS as reflected by total percentage of constant and increase dividend payout of 78.33% of the cases. In other words, forms are reluctant to decrease dividend payment.
- In overall Nepalese corporate firms are found reluctant ot decrease dividend either keeping dividend payment constant or higher to take the advantages of information contents and signaling effects of dividend relating to the firm’s continued progress and, performance, sound financial strength, favorable

investment environment, lower risk, ability to maintain sustained dividend rate and finally to increase the market price of the stocks in the stock market

2.5 Review of Thesis

A study done by **Mr. Rabindra Maskey**, entitled with “*Dividend Policy of Selected Commercial Banks in Nepal*” taking the three commercial banks as sample using secondary data has objectives and findings as follows:

Objectives:

- To access the prevailing dividend policy adopted by the selected banks.
- To access the impact of dividend on market price per share of selected commercial banks.

Major findings:

- The study of impact of cash dividend on MVPS revealed that DPS has strong positive impact on MVPS.
- A positive relationship is found between DPS and Net Profit.
- MVPS and DPS revealed that coefficient of dividend have positive impact on MVPS.

A study done by **Mr. Surendra Bista**, entitled with “*Dividend Policy and Practices in Nepal*” is a comparative study of listed joint ventures commercial banks and manufacturing companies, through data collected from 2002 to 2007 with three joint venture banks out of three manufacturing companies in 2006.

The major objectives of the study were:

- To examine the relationship between dividend and market price of the stock.
- To identify the appropriate dividend policy followed by the banks and manufacturing companies
- To analyze the relationship between dividend policy decision of bank and manufacturing companies.

Major findings are follows:

- The banks and manufacturing companies do not follow any specific dividend policy. DPR are fluctuating over the periods of those selected companies.
- MPS do not follow any specific trend, it fluctuates the future price.
- There is not any specific trend of EPS in the companies.
- There is great difference between market price per share and book value per share.

A study done by **Mr. Dipak Bhandari**, entitled with “*Dividend Policy Analysis of Commercial Banks of Nepal*” uses primary and secondary data has following objectives and findings:

Major objectives:

- To identify what type of dividend policy is being followed and whether or not the followed policy is appropriate.
- To highlight the dividend practices of selected commercial banks.
- To analyze the relationship between dividend per share with various important variables such as earning per share, net profit, net worth and stock prices.
- To provide a practical suggestion and positive guidelines to overcome various issues and gaps based on the findings of the analysis.

Major findings:

- From the primary data it can be concluded that companies distribute dividend to capture the market.
- The bank should consider mainly the legal consideration while declaring dividend and pay cash dividend to fulfill shareholders expectation.
- The bank should pay dividend only after financing in all investment opportunity.

A study done by **Mr. Saroj Tamang** entitled with, “*Dividend Policy of Commercial Banks (With respect to NIC, NABIL and BOK)*” has following objectives and findings

Main objectives:

- To analyze the prevailing dividend practices of sample banks.
- To analyze and evaluate the application of dividend decision in the selected banks.
- To analyze the relationship of dividend with earning per share, Net worth, Net profit, Market price and book value per share.

Major findings:

- There is lack of rules and regulations that bind companies to pay dividend every year. Not only the companies do not have dividend policy but also the government does not have any clear policy towards dividend.
- Dividend payout ratio does not show any stability and co-ordination with other variables. These banks do not have any strategic dividend policy.
- There seems instability and consistency in dividend payment by the banks.

A study done by **Mr. Shekhar Prasain**, entitled with “*Impact of Dividend on Market Price of Share*” with reference to NABIL Bank, Siddhartha Bank and NCC Bank has the following objectives and findings:

Main objectives:

- To analyze the impact of dividend policy on market price of share.
- To examine the direction and magnitude of relation between financial variables of selected banks.
- To analyze and explain the relation of MPS with EPS and retained earnings of the selected commercial banks.

Major findings:

- Significant difference in DPS among the selected bank. It is also found that dividend payment is neither consistent nor regular in these banks.
- The relation of MVPS with DPS is more significant than other.
- The simple regression between sample banks is not statistically significant but they correlated in positive direction.

A study done by **Mr. Bishnu Kuinkel**, entitled with “*Dividend Policy and Practices of Commercial Banks in Nepal*” taking the three commercial banks as sample using secondary data. His main objectives and findings are as follows:

Main objectives:

- To examine dividend policy and practices in Nepal commercial banks.
- To analyze the effect of dividend in share prices.

Major findings:

- The market price of share of all banks has been fluctuating. The uncontrolled increase in share price may be due to decrease in bank rate of interest.
- The market value per share has positively impact on EPS in case of all selected sample banks.
- The dividend distribution is irregular in those banks except Nabil Bank Ltd.

A study done by **Mr. Pradip Khanal**, entitled with “*A Study of Dividend Policy and its Impact on Market Price of Stock*” with reference to BOK, EBL, NIBL, and NSBL from 2006/07 to 2010/11 has the following objectives and findings:

Main objectives:

- To analyze the impact of dividend on stock price.
- To identify the determinant DPS and MVPS.
- To analyze the relationship of DPS with EPS and MVPS.
- To compare dividend practice of selected commercial banks.

Major findings:

- Higher the dividend payout ratio indicates that the firm is paying higher dividend to its shareholders and lower DP ratio implies that the firm is retaining its profit to profitable investment opportunities.
- MPS trend of all banks is in increasing trend over the sample period.
- Higher dividend implies that it is performing better.

- Correlation matrix of some banks shows that the positive correlation between DPS and MVPS but they both are statistically insignificant.

Research Gap

There have been many national and international studies in the field of dividend policy. All concepts and practices of foreign authors about the dividend practices are not more practicable in the context of Nepalese dividend policy because Nepalese capital market in the early stage of development. So being in the early stage even those studies have tried to find out the relationship between dividends policy and market price of stock, the conclusion made by the international studies may not be relevant in the Nepalese context. So it is recommended to devote some efforts and think foreign model dividend practices in Nepalese dividend Policy.

So far there have been so many studies of Nepalese research which can be considered as landmark in the field of dividend policy. But many more changes appear in the market in short time period. So it is necessary to carry out a fresh study related to dividend pattern of commercial banks of Nepal.

This study will analyze the price determination of common stock in secondary market of Nepal. Usually the price of common stock in primary market is par value but in secondary market may be any price i.e. more, less or equal to par value. In this study it is tried to carry out the distinct from the previous studies in terms of sample, size and methodology used. The study has covered only five commercial banks. Latest five year data have been analyzed.

Very few studies have analyzed existing state of dividend policies of Nepalese companies. However, none of the study tries to examine and interpret stock price movement after announcing the dividend decisions by listed companies of Nepal. It also tries to suggest the appropriate dividend policy to policy makers and executives.

This study will be beneficial to large mass of public who are interested to invest in Nepalese financial market as well as to the public companies, issue managers, underwriter, government organizations, and other parties who are interested on dividend policy directly or indirectly.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Concept

Research Methodology describes the methods and process applied in the entire aspect of the study. In other words, research methodology is a systematic way to solve the research problem. Research methodology is a systematic way to solve the research problem. Research methodology refers to the various sequential steps to be adopted by researcher in studying a problem with certain view. A focus is given to research design, sample selection and size, data collection, data processing, definition of variables, meaning and definition of statistical tools used.

As a result, these study and analysis has become a major tool to comfort the researcher to come to the choice of research methodology. This is useful to reflect the dividend policy and its impact on the share price.

In this chapter, efforts have been made to present and explain the specific research design for the sake of attaining the research objectives.

3.2 Research Design

The data required for the clarity of the concept and fulfill the study objectives are collected mostly from selected company's annual reports and NEPSE. The standard information and modern concept is view through the journals, articles, and book-let. The information so collected is analyzed using various standard and statistical measures. The statistical calculation will help to see if or not there is trend on the activities.

There arise various tools for operating and summarizing the information. The major tool to analyze data is selected to comply with the nature of data and meet the Nepalese investor's need. The tools and technique, which is suitable elsewhere, may not be appropriate in our context.

The information presented is represented with tables, charts and graphs. The tables, charts and graphs will be helpful to notice the information at glance and also assist to predict the future level.

The data after presentation is interpreted so as to best suit the interest of the reader or to provide the theoretical insight about the data behavior.

3.3 Population and Sample

There are 30 Commercial Banks and financial companies whose shares are traded actively in stock market. Which are consider the population of the study, but it is not possible to study all of them regarding the study topic. Therefore, sampling will be done selecting from population.

All Commercial banks are taken as the population where as five commercial banks will be the sample because the financial performance and popularity of these banks are good in the Nepalese financial market and it covers only the 15.63 percentage of whole population. The selected five commercial banks represent the whole population. The samples are as follows:

1. Himalayan Bank Ltd.(HBL)
2. Laxmi Bank Ltd. (LBL)
3. Bank Of Kathmandu (BOK)
4. Standard Chartered Bank Nepal Ltd. (SCBL)
5. Nepal Investment Bank Ltd.(NIBL)

3.4 Nature and Sources of Data

The research is totally based on the secondary data. The data relating to the thesis title are directly obtained from concerned Commercial Banks. Which may include the Annual Reports, Balance Sheet, and Profit and Loss Account of the Concerned Banks under the study? Besides various journals, articles are also followed in order to get the latest information in this regard. Other information sources have been taped from the institutions and regulating authorities like NRB, Security Board, Economic Survey Published from Ministry of Finance, Status Report published from World Bank,

Financial Reports Published by Nepal Stock Exchange. Main source of secondary data are:

- Annual report published by concerned banks.
- Nepal Stock Exchange, website i.e. www.Nepalstock.com and perspectives firm's central office and secondary exchange board.
- Security Board of Nepal.

3.5 Methods of Data Collection

The data used in this study are from secondary sources. The secondary data collected from, annual reports from Fiscal year 2006/07 to 2010/11, magazines and bulletins of the companies under study, relevant information and data from publication of SEBON, NEPSE, NRB, and web pages of the selected companies, various newspapers, previous studies, thesis and dissertation related to this field.

3.6 Analysis of Data

The analysis of data has been done according to the pattern of data available. Wide varieties of methodology have been applied according to the reliability and consistency of data. Firstly, the collected data are presented in proper forms, grouped in various tables and charts according to their nature. Then various financial and statistical tools have been applied. And then interpretations and explanations are made wherever necessary with the help of various statistical analyses.

3.6.1 Tools of Analysis

Various financial and statistical tools have been used in the study. The analysis of data will be done according to the pattern of data. Financial tools and simple regression analysis, multiple regression analysis and Hypothetical test will mainly be the tools of analysis. The relationship between different variable related to study topic would be drawn out using financial and statistical tools. The main financial indicator EPS, DPS, MPS, P/E Ratio, Dividend Yield. Earning Yield and D/P ration will be calculated in this research, likewise statistical tools arithmetic mean, simple

regression analysis, standard deviation, coefficient of correlation and hypothetical test will be calculated in the research.

3.6.1.1 Financial Tools:

A brief explanation of financial tools used in this study is as follows:

Earnings Per Share (EPS)

Earnings per share are one of the factors that affect the dividend policy and stock price of a firm. EPS calculation will be helpful to know whether the firm's earning power on per share basis. If EPS is greater the dividend will be larger and so is the market price. So it is assumed as independent variable to determine the dividend and market price of stock. It is calculated by dividing the earning available to the common shareholder by the total number of common shares outstanding.

Symbolically,

$$EPS = \frac{\text{Earning Available to Equity Shareholders}}{\text{No. of Common Stock Outstanding}}$$

Dividend Per Share (DPS)

The earning distributed to the shareholders out of EPS is known as DPS. It also affects the market price of stock. If EPS is greater, DPS will be greater. It is calculated by dividing total dividend to equity shareholders by the total number of the equity shares.

Symbolically,

$$DPS = \frac{\text{Total Dividend to Ordinary Shareholders}}{\text{No. of Common Stock Outstanding}}$$

Dividend Payout Ratio (DPR)

DPR reflects what percentage of profit is distributed as dividend and what percentage is retained as reserve and surplus for the growth of the company. It is calculated by dividing the DPS by EPS.

Symbolically,

$$DPR = \frac{\text{Dividend Per Share (DPS)}}{\text{Earning Per Share (EPS)}}$$

Earning Yield Ratio (EYR)

This shows the relationship between earning per share and market value per share. It is calculated by dividing earning per share by market value per share.

Symbolically,

$$EYR = \frac{\text{Earning Per Share (EPS)}}{\text{Market Price Per Share (MPS)}}$$

Dividend Yield Ratio (DYR)

This ratio shows the relationship between dividend per share and market value per share. It is calculate by dividing dividend per share by market value per share.

Symbolically,

$$DYR = \frac{\text{Dividend Per Share (DPS)}}{\text{Market Price Per Share (MPS)}}$$

Price Earnings Ratio (P/E Ratio)

This ratio reflects the market value per share for each rupee of currently reported EPS. It is calculated by dividing the market value per share by earning per share.

Symbolically,

$$\text{P/E Ratio} = \frac{\text{Market Price Per Share (MPS)}}{\text{Earning Per Share (EPS)}}$$

3.6.1.2 Statistical Tools:

A brief explanation of statistical tool used in this study is as follows:

Arithmetic Mean (\bar{X})

The most popular and widely used measure of representing the entire data by one variable is the arithmetic mean. The arithmetic mean is the sum of total values to the number of observations in the sample. It represents the entire data, which lies almost between two extremes. For this reason, an average is frequently referred to as a measure of central tendency.

Symbolically,

$$\text{Mean } \bar{X} = \frac{\text{Sum of total Values (SX)}}{\text{No. of Values (N)}}$$

Standard Deviation (σ)

The measurement of scatterness of the data of figure in a series about an average is known as dispersion. The standard deviation measures the absolute dispersion. The greater amount of dispersion reflects the high standard deviation. A small standard deviation means a high degree of uniformity of observation as well as homogeneity of a series and vice-versa.

Symbolically,

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{S(X-\bar{X})}{N}}$$

Coefficient of Variation (CV)

The coefficient of variation is defined as the ratio of standard deviation to the mean expressed in percentage.

Symbolically,

$$CV = \frac{S}{\bar{X}} \times 100\%$$

The coefficient of variation is the relative measure and is independent of units. The coefficient of variation is applicable for the comparisons of variability of two or more distributions. The greater the value of the coefficient of variation, the less will be the

uniformity (or consistency, stability, etc.) and the smaller the value of coefficient of variation, the more will be the uniformity (or less will be the variability).

Correlation Analysis

Correlation analysis is the statistical tools that can be used to describe the degree to which one variable is linearly related to another. In the study, both single and multiple correlations have been used. Correlation co-efficient between the following financial variables have been calculated and interpreted.

Simple correlation coefficient

- Between dividend per share and earnings per share
- Between earning per share of last year and current market price per share
- Between dividend per share of last year and current market price per share

Probable Error [PE]

The probable error of the coefficient of correlation helps in interpreting its value. It helps to determine the reliability of the value of coefficient. To crosscheck the validity of the result, we can take the help of following formula.

Symbolically,

$$PE(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

Where, $PE(r)$ = Probable Error of 'r'

r = Correlation coefficient between x and y

There are three condition to know the degree of correlation between x and y.

1. If the value of 'r' is less than 6 times the probable error [i.e. $r < 6 \times PE(r)$], there is no significant relationship between x and y.]
2. If the value of 'r' is more than 6 times the probable error [i.e. $r > 6 \times PE(r)$], there is most significant relationship between x and y.]
3. If $PE(r) < r < 6 \times PE(r)$, there is moderate relation between x and y.

In the study, probable error has been calculated to determine the reliability of the value of coefficient of EPS and DPS, DPS and Net Profit and DPS and Net Worth.

Regression Analysis

Correlation analysis tells the direction of movement but it does not tell the relative movement in the variables under study. Regression analysis helps us to know the relative movement in the variables. Regression analysis of following variables have been calculated and interpreted.

Simple Regression Analysis

Dividend Per Share on Earning Per Share

This analysis enables us to know whether EPS is the influencing factor of dividend per share or not at what extent EPS affects the DPS

$$Y = a + bx$$

Where, y = Dividend per share
 a = Regression constant
 b = Regression coefficient
 x = Earnings per share

Market Price Per Share and Dividend Per Share of Last Year

This analysis tests the dependency of market price on dividend per share of last year,

$$Y = a + bx$$

Where, y = Market Price per Share
 a = Regression constant
 b = Regression coefficient

x = Dividend per share of last year

Market Price Per Share and Earning Per Share of Last Year

The analysis tests the dependency of market price on earning per share of last year.

$$Y = a + bx$$

Where, y = Market Price per Share

a = Regression constant

b = Regression coefficient

x = Earnings per share of last year

3.6.2 Test of Hypothesis

A hypothesis is a conjectural statement of the relationship between two or more variables (Kerlinger: 1964). Hypothesis Statement should be able to show the relationship between variables. At the same time, they should carry clear implication for testing the stated relations. At the same time, they should carry clear implication for testing the stated relations. The research on this thesis topic strongly holds that the hypothesis formulated, meet the above mentioned criteria. The hypothesis of this study is as follows:

T-statistics

To test the validity of assumption of if sample size is less than 30, t-test is used. For applying t-test in the context of small sample, the t-value is calculated at first and compared with the table value of 't' at a certain level of significance for given degree of freedom. If calculated t-value exceeds the table value (say 0.05) we infer that the difference is significant at 5% level. But if t-value is less than that of table value the difference is not treated as significant. In this research work, t-value is calculated between earning per share and dividend per share, net profit and dividend per share and market price per share.

F-Statistic

To test the validity of the assumption, f-test is also used. The difference between two sample mean can be studied through t-test whereas to examine the significance to the difference between more than two sample means at one at the same time, F-test is used. F-test, i.e. the technique of analyzing variance enables to test the significance to difference between more than two sample means. Using these techniques, one will be able to make inferences about whether his/her regression equation provides statistically significant result or not.

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

In this chapter, the relevant data and information on dividend policy of the selected companies are presented and analyzed comparatively keeping the objective of study in mind. To begin with analysis of dividend payment practices of the banks is done at first. In the second part of the chapter, analysis of impact of dividend policy on market price of share and relationship of dividend with other key variables are done with the help of the statistical tools mentioned in the chapter. In the third part, hypothetical analysis is done. This is the main central nervous system, which helps to conclude the study through major findings, vital issues and recommendation. This chapter makes the proper linkage with other chapter.

4.1 Analysis of Financial Indicators and Variables

4.1.1 Analysis of Earning Per Share (EPS)

Generally, the performance and achievements of business organization are measured in term of their capability to generate earnings. The earnings of any business organization also help to evaluate performance. Higher earning indicates the strength and lower earning denotes the weakness of business organization helps for its growth, expansion and modernizations. The earning power of the business unit is measured in terms of earning per share (EPS). EPS calculation made over the years indicates whether the company's earning power per share has improved or deteriorated over period. Therefore, EPS is one of the vital variables measuring the firm's earning generation.

Table 4.1
Analysis of Earning Per Share (EPS)

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	61.90	20.70	54.68	109.99	37.42
2009/10	31.80	24.12	43.08	77.65	52.55
2010/11	44.66	23.25	44.51	69.51	48.84
2011/12	39.94	21.55	37.88	72.60	27.60
2012/13	34.19	24.75	36.64	65.70	46.20
Total	212.49	114.37	216.79	395.12	212.61
Mean	42.50	22.87	44.36	79.02	42.52
S.D.	11.95	1.72	7.24	17.82	10.03
C.V.%	28.12	7.52	16.32	22.55	23.59

(Source: Appendix-I)

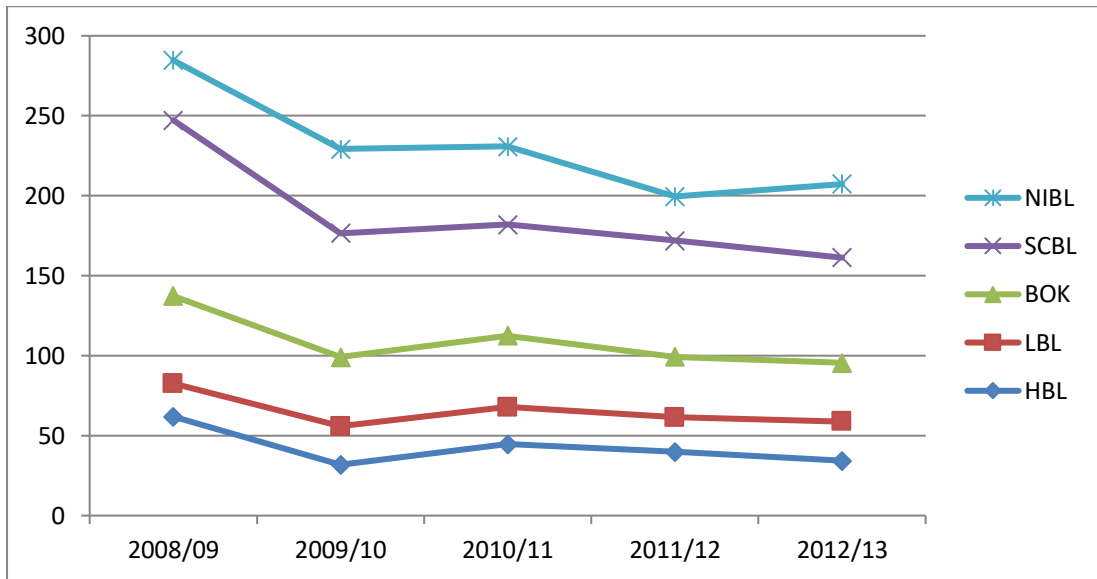
The table 4.1 shows the amount of earning per share of the sample banks from FY 2008/09 to FY 2012/13. The average EPS of HBL is Rs.42.50. The EPS of the bank ranges in between 31.80to 61.90. Standard deviation of EPS of HBL is 11.95 and CV is 28.12 %.

The average EPS of LBL is 22.87. The EPS of the bank ranges in between 20.70 to 24.75. Standard deviation of EPS of LBL is 1.72 and CV is 7.52%.

The average EPS of BOK is 44.36. The EPS of the bank ranges in between 36.64 to 54.68. Standard deviation of EPS of BOK is 7.24 and CV is 16.32%.

Likewise, SCBL, has the highest average EPS among the selected companies Rs.79.02. The EPS of the bank ranges in between 65.70 to 109.99. Standard deviation of EPS of SCBL is 17.82 and CV is 22.55%.

Figure 4.1 Earning Per Share



The average EPS of NIBLL is Rs. 42.52. The EPS of bank ranges between 27.60 to 52.55. Standard deviation of EPS of NIBL is 10.03 and its CV is 23.59%, which is lower than that of SCBL.

From the above analysis it can be seen that the average EPS (79.02) of SCBL is higher and LBL has lower EPS (Rs.22.87) among all sample banks. The C.V. of HBL (28.12%) is higher among the sample banks, and LBL (7.52%) has lowest C.V. among the sample banks. It indicates that the LBL has the most consistent EPS among all sample banks during the period of study.

4.1.2 Analysis of Dividend Per Share (DPS)

Dividend per share is the amount of dividend distributed to the shareholders for the single unit of share. Generally, the higher DPS creates positive attitude among the shareholders towards the bank, which accordingly helps to increase the market value of share. However, only cash dividend distributed to the shareholders of the banks under study. DPS indicates the portion of earning distributed to the shareholders on per share basis. The following table shows all details relating to dividend per share.

Table IV.2
Analysis of Dividend per Share

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	43.56	5.26	47.74	100	20
2009/10	36.84	13.00	30.00	70	25
2010/11	36.84	15.79	34.75	50	50
2011/12	28.42	10.00	26.32	60	30
2012/13	15.00	15.00	14.74	50	35
Total	160.66	59.05	153.55	330	160
Mean	32.13	11.81	30.71	66	32
S.D.	10.98	4.29	12.05	20.74	11.51
C.V.%	34.17	36.33	39.24	31.42	35.97

(Source: Appendix-II)

The table 4.2 shows the amount of dividend per share of the sample banks from FY 2008/09. In table the average DPS of HBL is 32.13. The DPS of bank ranges between Rs.15 to 43.56 in given five years. Standard Deviation of DPS of HBL is 10.98 and CV is 34.17%.

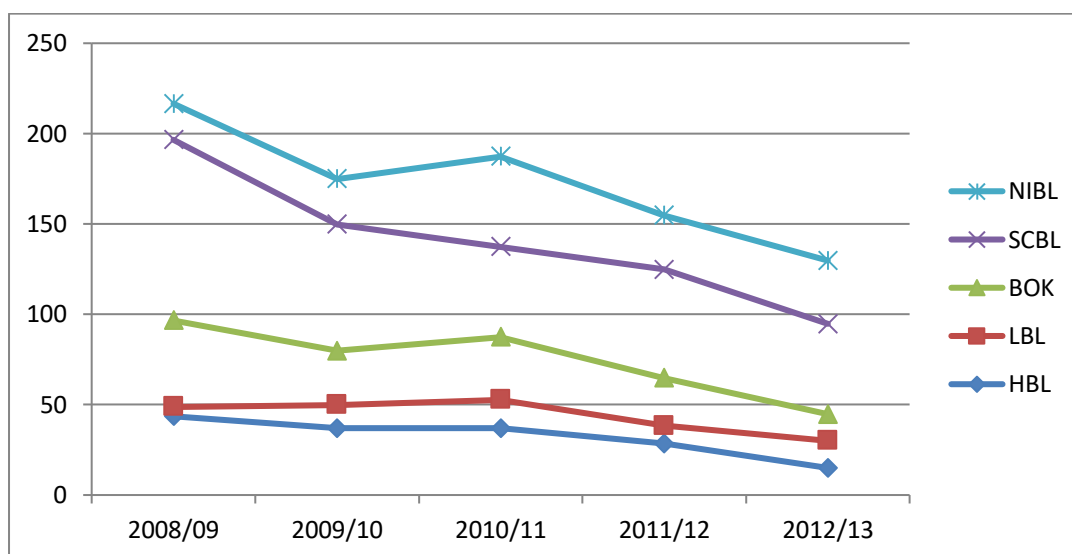
The average DPS of LBL is 11.81. The DPS of bank ranges between Rs.5.26 to 15.79 in given five years. Standard Deviation of DPS of LBL is 4.29 and CV is 36.33%.

The average DPS of BOK is 30.71. The DPS of bank ranges in between Rs.14.74 to 47.74 in given five years. Standard Deviation of DPS of BOK is 12.05 and CV is 39.24%.

The average DPS of SCBL is Rs. 66. The DPS of bank ranges between Rs.50 to 100. The standard Deviation of DPS of SCBL is 20.74 and its CV is 31.42%.

Likewise, the average DPS of NIBL is Rs.32. The DPS of bank ranges between Rs.20 to Rs.50 in given five years. Standard deviation of DPS of NIBL is 11.51 and its CV is 35.97%.

Figure 4.2 Dividend Per Share



4.1.3 Analysis of Market Price Per Share (MPS)

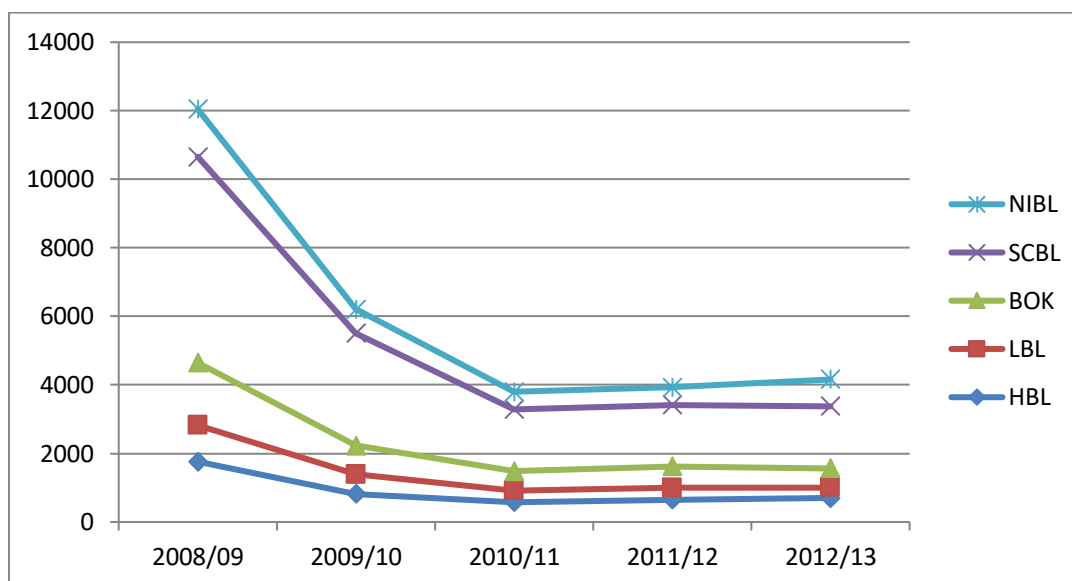
Market price of share refers to the value paid to a share of the firm by the investors in stock market. This price fixed based on demand and supply interaction of a specified share in the stock market. MPS represents the closing market price of the particular share in the particular fiscal year in NEPSE. The following table shows the market price of sample firms.

Table 4.3
Analysis of Market Price per Share

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	1760	1062	1825	6010	1388
2009/10	816	570	840	3279	705
2010/11	575	340	570	1800	515
2011/12	653	340	628	1799	511
2012/13	700	309	553	1820	784
Total	4504	2621	4416	14708	3903
Mean	900.80	524.20	883.20	2941.60	780.60
S.D.	488.18	318.40	538.77	1830.01	359.82
C.V.%	54.19	60.74	61.00	62.21	69.15

(Source:Appendix-I)

Figure 4.3 Market Price Per Share



The table presents the MPS of the five samples Bank for the period of five fiscal years starting from 2008/09 to 2012/13. The average MPS of HBL is Rs.900.80. The MPS of bank ranges from Rs.575 to 1760. Standard Deviation of MPS of HBL is 488.18 and 54.19%.

During the period of study, LBL has an average MPS of Rs.524.2 with the S.D. of Rs.318.40. The MPS range between Rs.309 to 1062. Coefficient of Variation is 60.74%.

BOK has an average MPS of Rs.883.20 and the MPS range between 553 to 1825. The S.D. is 538.77 and the fluctuation of 61.00% in the EPS is seen during this study period which is shown by the C.V. of the bank.

The MPS of SCBL ranges between Rs.1799 to 6010 during the period of study. During this period, the average MPS is Rs. 2941.60. The S.D. of the MPS under the period of study is Rs.1830.01. The C.V. of the bank is 62.21% in the MPS of SCBL during the period of study.

Likewise, NIBL has the MPS ranges between Rs.511 to 1388. The average MPS is Rs.780.60. The S.D. of MPS is Rs.359.82 whereas C.V. of MPS is 69.15%, which

indicates that there are 69.15% fluctuations in the MPS of bank, during the period of study.

4.1.4 Analysis of Dividend Payout Ratio (DPR)

The amount of dividend that a company pays depends upon the earning capacity of the company. Greater earning enhances the ability to pay more dividends and vice versa. In connection with this, dividend payout ratio reflects that percentage of current profit, which has been distributed as dividend and what percentage has retained to finance the growth of the company. It is the attitude of the management towards the treatment of profit in respect to distribution of dividend and retained earnings.

The following table shows the Dividend Payout Ratio (DPR) of sample companies

Table 4.4
Analysis of Dividend Payout Ratio

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	70.37	25.41	87.31	90.92	53.45
2009/10	115.85	53.90	69.64	90.15	47.57
2010/11	82.49	67.91	78.07	71.93	102.38
2011/12	71.16	46.60	69.48	82.64	108.7
2012/13	43.87	60.61	40.23	76.10	75.76
Total	383.74	254.43	344.73	411.74	387.86
Mean	76.75	50.89	68.95	82.35	77.57
S.D.	26.05	16.29	17.65	8.40	27.70
C.V.%	33.94	32.01	25.60	10.20	35.71

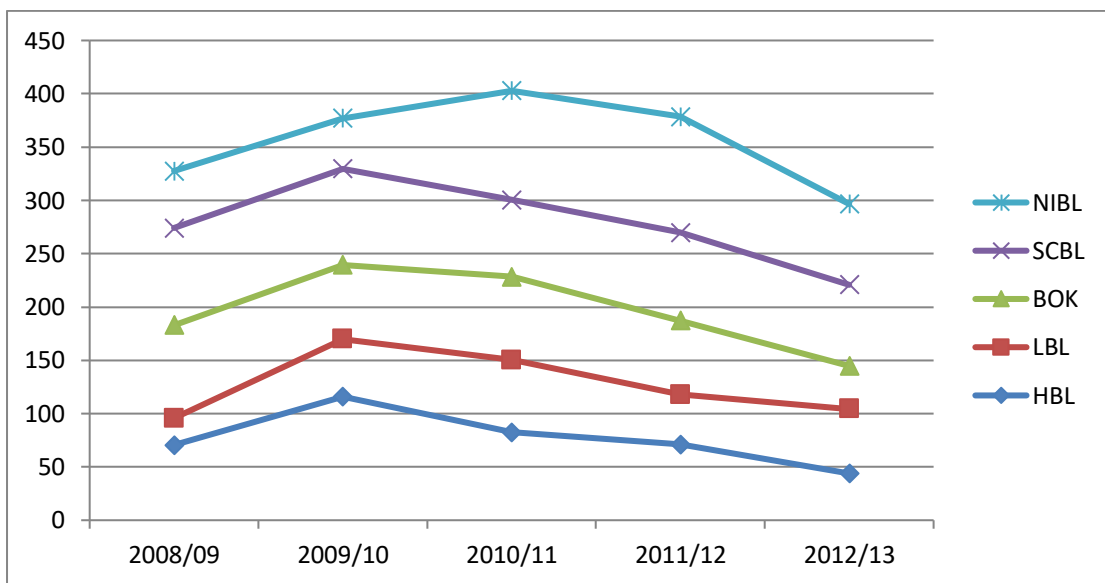
(Source: Appendix-I& II)

An average DPR of HBL is 76.75, it shows that HBL generally pays 76.75% of its total earnings as dividend to its shareholders. The S.D. of DPR is 26.05. The C.V. is 33.94%, which indicates that there is only about 33.94% fluctuation in the DPR of the bank over the study period.

LBL has an average DPR of 50.89, it means that LBL is generally pays 50.89% of its earnings as dividend to its shareholders. The S.D. of DPR is 16.29 and C.V. is 32.01%, which is highly consistent in comparison with other banks.

An average DPR of BOK is 68.95, it shows that BOK generally pays 68.95% of its total earnings as dividend to its shareholders. The S.D. of DPR is 17.65 and C.V. is 25.60%, which indicates that there is 25.60% fluctuation in the DPR of BOK which is highly consistent during the period of study.

Figure 4.4 Market Price Per Share



An average DPR of SCBL is 82.35, it shows that SCBL generally pays 82.35% of its earnings as dividend to its shareholders. The S.D. of DPR 8.40 and C.V. is 10.20% , which indicates that there is 10.20% fluctuation in the DPR of SCBL .

Likewise, an average DPR of NIBL is 77.57; it indicates that NIBL generally pays 77.57% of its earnings as dividend to its shareholders. The S.D. of DPR is 27.70 and C.V. is 35.71%, which indicates that there is 35.71% fluctuation in the DPR of NIBL.

4.1.5 Analysis of Dividend Yield Ratio (DYR)

Dividend Yield Ratio is highly influenced by the market value per share and dividend per share. This ratio highly influences the market value per share because small change in dividend per share can bring effective change in market value of that share.

Therefore, before allocation of a market scenario and price fluctuation is said to be studied and evaluated for the long run survival of the company

The following table shows Dividend Yield Ratio (DYR) of the sample Banks.

Table 4.5
Analysis of DYR

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	2.48	4.95	2.62	1.66	1.44
2009/10	4.51	2.28	3.57	2.13	3.55
2010/11	6.41	4.64	6.09	2.78	9.71
2011/12	4.35	2.94	4.19	3.34	5.58
2012/13	2.14	4.85	2.67	2.75	4.46
Total	19.89	19.66	19.14	12.66	24.74
Mean	3.98	3.93	3.83	2.53	4.95
S.D.	1.73	1.23	1.42	0.65	3.06
C.V.%	43.47	31.30	37.08	25.69	61.82

(Source: Appendix-I& II)

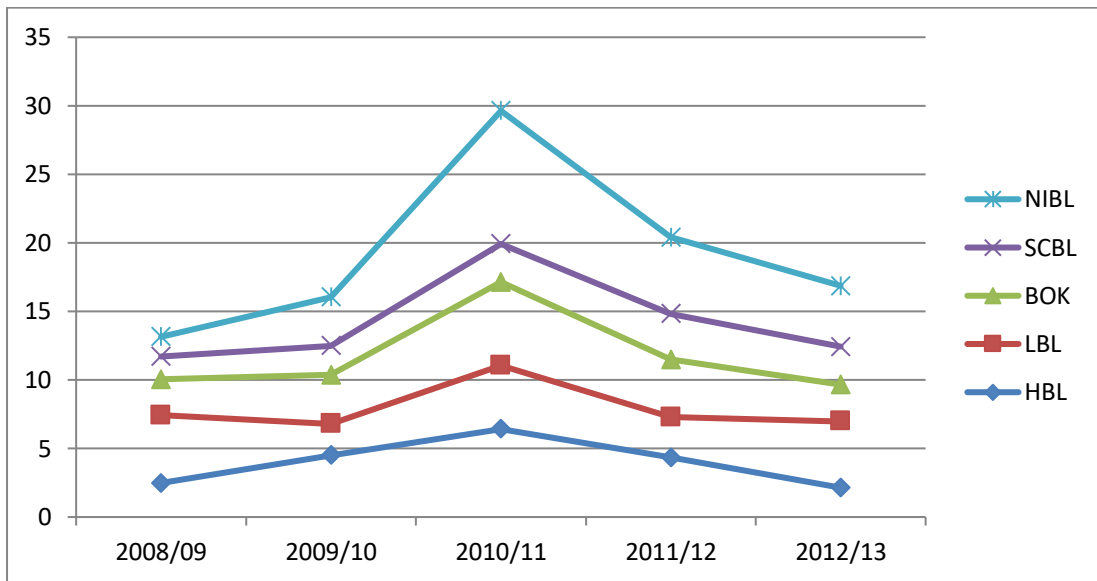
The DYR of HBL ranges in between 2.14 to 6.41 during the period of study. The average DYR is 3.98 and S.D. of the DYR under the period of study is 1.73. The C.V. of the bank is 43.47%, which indicates that the fluctuation in DYR of HBL.

Laxmi Bank Limited (LBL) has an average DYR of 3.93 with S.D. of 1.23. The DYR ranges in between 2.28 to 4.95. The C.V. shows that there is a fluctuation of 31.30% in DYR, which is lower than NIBL.

BOK with the period of study had an average DYR of 3.83 ranging in between 2.62 to 6.09. The S.D. is 1.42 whereas C.V. is 37.08%. The C.V. indicates that there is an 37.08% fluctuation in DYR.

During the period of study SCBL has an average DYR of 2.53 with a S.D. of 0.65. The DYR ranges in between 1.66 to 3.34. The C.V. shows that there is a fluctuation of 25.69% in DYR of SCBL.

Figure 4.5 Dividend Yield Ratio



Likewise, the average DYR of NIBL is 4.95 and ranges in between 1.44 to 9.71. The S.D. is 3.06 and C.V. is 61.82%. This is the highest among all banks.

4.1.6 Analysis of Price Earnings Ratio (P/E Ratio)

Price earnings ratio is concerned with the relationship of the market value per share. It indicates the price currently paid by the market value per share. It indicates the price currently paid by the market for each rupee of reported earnings per share. The analysis of P/E Ratio helps to judge the investors' expectations about the companies' performance and also market appraisal of the companies' performance. Higher P/E Ratio shows the better performance and vice-versa. Hence higher P/E ratio is regarded as better for both the banks and shareholders. It is calculated by dividing the market value per share by earning per share.

Table 4.6
Analysis of P/E Ratio

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	28.43	51.31	33.38	54.64	37.10
2009/10	25.66	23.63	19.50	42.23	13.42
2010/11	12.86	14.62	12.81	25.90	10.54
2011/12	16.35	15.78	16.58	24.78	18.51
2012/13	20.47	12.48	15.09	27.70	16.97
Total	103.77	117.82	97.36	175.25	96.54
Mean	20.75	23.56	19.74	35.05	19.31
S.D.	6.42	16.07	8.15	13.02	10.42
C.V.%	30.94	68.21	41.86	37.15	53.96

(Source: Appendix-I& II)

The average P/E ratio of HBL, during the period of study is 20.75. It is within the range in between 12.86 to 28.43. The S.D. of P/E ratio is 6.42 whereas the coefficient of variation is 30.94% which indicates the bank has the moderate fluctuation in P/E ratio.

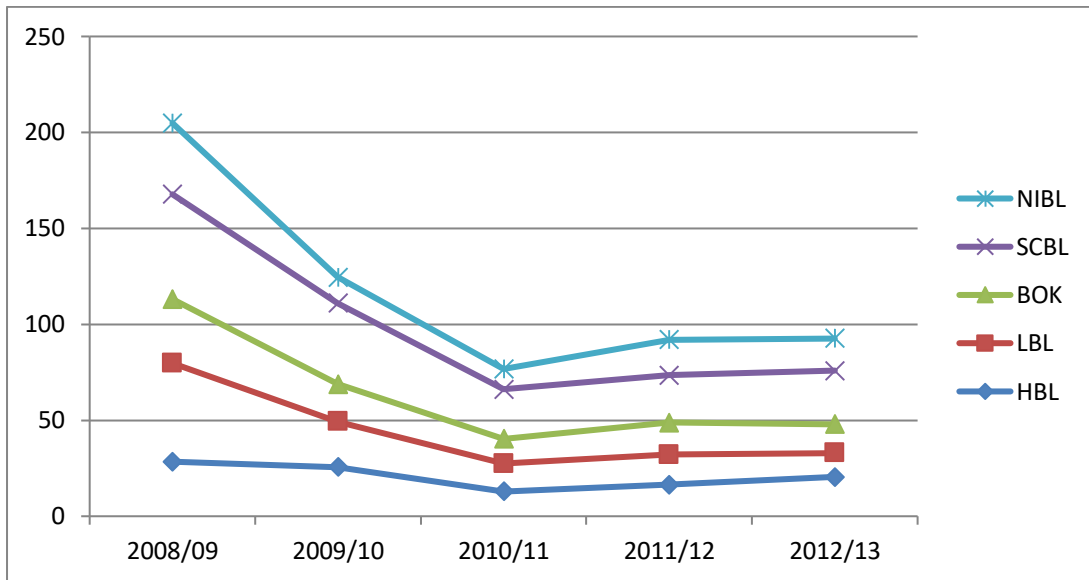
LBL has the average P/E ratio of 23.56 with the S.D. of 16.07. The coefficient of variation of LBL is 68.21% which indicates the bank has the highest fluctuation of P/E ratio among the bank during the period of study.

BOK has an average P/E ratio 19.47 ranging in between 12.81 to 33.38. The S.D. of P/E ratio is 8.15 and the fluctuation of 41.86%. in the P/E ratio is seen during this period. It indicates that the bank has the moderate fluctuation of P/E ratio among the bank.

SCBL has an average P/E ratio 35.05 ranging in between 24.78 to 54.64. The S.D. of P/E ratio is 13.02 and the fluctuation of 37.15%. In the P/E ratio is seen during this period. It indicates that the bank has the moderate fluctuation of P/E ratio among the bank.

NIBL has an average P/E ratio 19.31 ranging in between 10.54 to 37.10. The S.D. of P/E ratio is 10.42 and the fluctuation of 53.96%. In the P/E ratio is seen during this period. It indicates that the bank has the moderate fluctuation of P/E ratio among the bank.

Figure 4.6 Price Earning Ratio



**Table 4.7
Analysis of Earning Yield Ratio (EYR)**

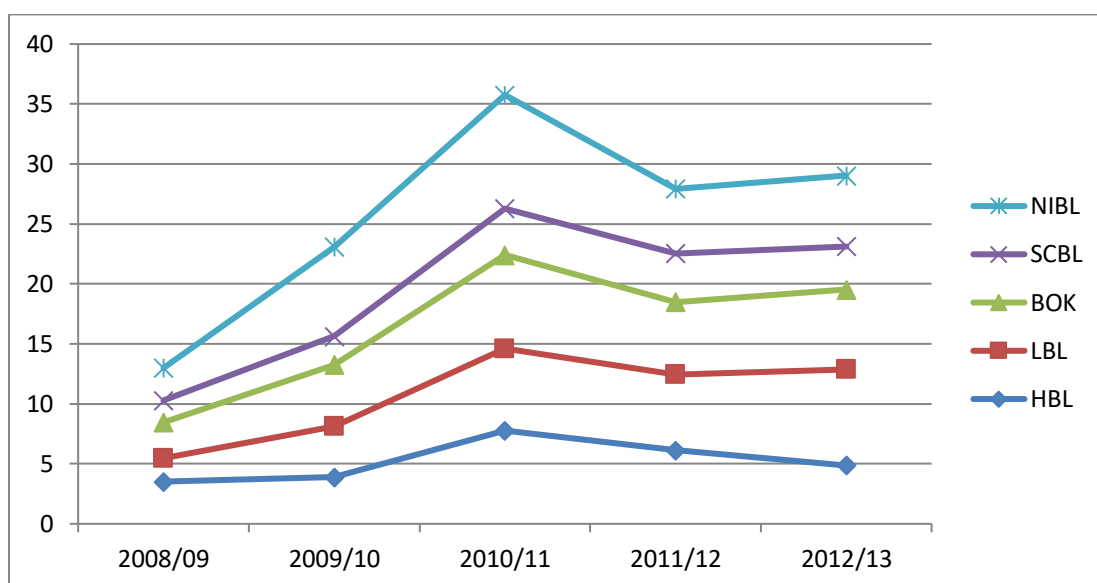
Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	3.52	1.95	2.99	1.83	2.7
2009/10	3.90	4.23	5.13	2.37	7.45
2010/11	7.77	6.84	7.81	3.86	9.48
2011/12	6.12	6.34	6.03	4.04	5.40
2012/13	4.88	8.01	6.63	3.61	5.89
Total	26.19	27.37	28.59	15.71	30.92
Mean	5.24	5.45	5.72	3.14	6.18
S.D.	1.74	2.50	1.81	0.98	2.52
C.V.%	33.21	45.87	31.64	31.21	40.78

(Source: Appendix-I & II)

The EYR of HBL ranges in between 3.52 to 7.77 during the period of study. The average EYR is 5.24. The S.D. of EYR under the period of study 1.74. The C.V. of bank is 33.21%, which is higher than that of SCBL.

LBL with the period of study has an average EYR of 5.45 ranging in between 1.95 to 8.01. The S.D. of the bank is 2.50 and the C.V. is 45.87%.

Figure 4.7 Earning Yield Ratio



The EYR of BOK ranges in between 2.99 to 7.81 during the period of study. The average EYR is 5.72. The S.D. of EYR under the period of study 1.81. The C.V. of bank is 31.64%, which is higher than that of SCBL.

The EYR of SCBL ranges in between 1.83 to 4.04 during the period of study. The average EYR is 3.14. The S.D. of EYR under the period of study 0.98. The C.V. of bank is 31.21%, which is lower than that of all.

The EYR of NIBL ranges in between 2.70 to 9.48 during the period of study. The average EYR is 6.18. The S.D. of EYR under the period of study 2.52. The C.V. of bank is 40.78%.

4.2 Analysis of Statistical Indicators and Variables

4.2.1 Correlation between EPS and DPS

Correlation analysis is a statistical tool which studies the relationship between two variables and it involves various methods and technique

Table 4.8
Correlation between EPS and DPS

Name of the Bank	Coefficient of Correlation(r)	Coefficient of Determination(r^2)	Probable Error	6 P.E.	Significant /Insignificant
HBL	0.64	0.4096	0.178	1.068	Insignificant
LBL	0.87	0.7569	0.733	4.398	Insignificant
BOK	0.954	0.9101	0.027	0.162	Significant
SCBL	0.993	0.9860	0.0042	0.0252	Significant
NIBL	0.32	0.1024	0.271	1.626	Insignificant

(Source: Appendix V)

As shown in table 4.8 the correlation coefficient between Earning Per Share (EPS) and Dividend Per Share (DPS) of HBL, LBL, BOK, SCBL, NIBL are 0.64, 0.87, 0.954, 0.993 and 0.32 respectively. There is a strong positive relationship between the two variables of HBL, LBL, BOK, SCBL and NIBL. Coefficient of determination (R^2) of HBL, LBL, BOK, SCBL and NIBL is 0.4096, 0.7569, 0.9101, 0.9860 and 0.1024 respectively, which shows DPS of all banks explains 40.96%, 75.69%, 91.01%, 98.60%, 10.24% of variation in the EPS.

Since, R of HBL, LBL, BOK, SCBL and NIBL are 0.64, 0.87, 0.954, 0.993 and 0.32 respectively and which have positive r are lower than 6PE of HBL, LBL, NIBL. The relationship between DPS and EPS is insignificant which means that the increase in DPS will not increase in EPS.

4.2.2 Regression Analysis between EPS and DPS

Let the dependent variable EPS is denoted by Y and independent variable DPS is denoted by X, and then the regression equation of EPS on DPS is given by:

(Appendix IV is summarized in the below Table 4.10

$$Y = a + b X$$

Table 4.9
Regression between EPS and DPS

Name of the Bank	Constant (a)	Regression Coefficient (b)	T-Value	Significant /Insignificant
HBL	56.95	0.584	1.44	Insignificant
LBL	61.90	2.19	3.06	Significant
BOK	100.52	1.61	5.51	Significant
SCBL	156.88	1.15	14.56	Significant
NIBL	47.39	0.362	0.585	Insignificant

(Source: Appendix V)

The table 4.9 depicts the major output of simple regression analysis of average Dividend price of share (DPS) on EarningPer Share of the concerned banks.

As far as regression of EPS and DPS in concerned, the regression coefficient of SCBL is 1.15it indicates that a one rupees increase in EPS leads to an average of Rs. 1.15 increase in EPS of SCBL. The regression coefficient of NIBL is 0.362. It indicates that a one rupees increase in DPS leads to an average of Rs. 0.362 increase in EPS of NIBL. Likewise, the regression coefficient of HBL is 0.584. It indicates that a one rupees increase in DPS leads to an average of Rs. 0.584 increase in EPS of HBL. In above analysis LBL and BOK dividend are affected by EPS because these regression coefficient 2.19 and 1.61 respectively, which is positive.

The test of t- statistics aid to include that the relationship between EPS and DPS of HBL, andNIBL is insignificant since calculated T- value 1.44 and 0.585of HBL and NIBL respectively is lower than the tabulated t- value (2.87), whereas the relationship

between EPS and DPS of LBL, BOK, SCBL are significant since calculated T- value of LBL (3.06), BOK (5.51) and SCBL (14.56) is higher than the tabulated t- value (2.87) at 5% level of significance on 4 degree of freedom.

Table 4.10
Correlation between EPS and MPS

Name of the Bank	Coefficient of Correlation(r)	Coefficient of Determination(r^2)	Probable Error	6 P.E.	Significant /Insignificant
HBL	0.822	0.6724	0.098	0.098	Significant
LBL	-0.62	0.3844	0.186	1.116	Insignificant
BOK	0.903	0.8154	0.056	0.336	Significant
SCBL	0.978	0.9596	0.131	0.786	Significant
NIBL	-0.104	0.0108	0.298	1.788	Insignificant

(Source: Appendix IV)

As shown in the table 4.10, the correlation coefficient between Market price of share (MPS) and Earnig Per Share (EPS) of HBL, LBL, BOK, SCBL and NIBL are 0.822, -0.62, 0.903, 0.978, and -0104 respectively. The above figure indicates high degree of positive relationship between the two variables of BOK, SCBL, HBL. There is a negative relationship between the two variables of LBL and NIBL. Coefficient of determination (R^2) of HBL, LBL, BOK, SCBL and NIBL is 0.6724, 0.3844, 0.8154, 0.9565 and 0.0108 respectively which shows EPS of these banks explains only 67.24%, 38.44%, 81.54%, 95.65% and 1.08% of variation in the MPS.

Since R of LBL (-0.62) is lower than 6P.E. the relationship between EPS and MPS insignificant, which means that the increase in EPS will not increase in MPS. And MPS is insignificant, which means that the increase in EPS will not increase in MPS. Similarly R of HBL, BOK, and SCBL is higher than that of 6P.E, which also indicates that there is significant relationship between EPS and MPS.

4.2.3 Regression Analysis between EPS and MPS

Let the dependent variables MPS is denoted by Y and independent variable EPS is denoted by X, and then the regression equation of MPS on EPS is given by:

$$Y = a + b X$$

Table 4.11
Regression between EPS and MPS

Name of the Bank	Constant (a)	Regression Coefficient (b)	T-Value	Significant /Insignificant
HBL	2331.33	33.59	2.50	Insignificant
LBL	-2097.85	-114.63	-1.37	Insignificant
BOK	3833.28	68.04	3.64	Significant
SCBL	10854.27	100.13	8.12	Significant
NIBL	622.42	-3.72	-0.181	Insignificant

(Source: Appendix IV)

The Table 4.11 depicts the major output of simple regression analysis of average Market Price of share (MPS) on Earning Per Share of the concerned banks.

As far as regression of MPS and EPS in concerned, the regression coefficient of HBL, LBL, BOK, SCBL and NIBL are 33.59, -114.63, 68.04, 100.13 and -3.72 respectively, it indicates that a one rupees increase in EPS leads to an average of Rs.33.59, -114.63, 68.04, 100.13 and -3.72 increase in MPS of HBL, LBL, BOK, SCBL and NIBL respectively. In the above analysis EPS of LBL and NIBL are not affected by MPS because regression coefficient of both bank have negative -114.63 and -3.72 respectively.

The test of t- statistics aid to include that the relationship between EPS and MPS of LBL, SCBL and NIBL is insignificant since calculated T- value 2.5, -1.37 and -0.181 of HBL, LBL and NIBL respectively is lower than the tabulated t- value (2.87), whereas the relationship between EPS and MPS of BOK and SCBL is significant since calculated T- value of SCBL (8.12) and BOK (3.64) is higher than the tabulated t- value (2.87) at 5% level of significance on 4 degree of freedom.

Table 4.12
Correlation between DPS and MPS

Name of the Bank	Coefficient of Correlation(r)	Coefficient of Determination(r^2)	Probable Error	6 P.E.	Significant /Insignificant
HBL	0.571	0.3249	0.203	1.22	Insignificant
LBL	-0.83	0.6889	0.094	0.564	Insignificant
BOK	0.82	0.6724	0.099	0.594	Significant
SCBL	0.979	0.9584	0.013	0.078	Significant
NIBL	-0.663	0.440	0.170	1.02	Insignificant

(Source: Appendix III)

As shown in the table 4.12, the correlation coefficient between Market Per Share (MPS) and Dividend Per Share (DPS) of HBL, LBL, BOK, SCBL and NIBL are 0.571, -0.83, 0.82, 0.979 and -0.663 respectively. The above figure shows a high degree of negative relationship between the two variables of LBL and NIBL, a high degree of positive relationship between the DPS and EPS of SCBL.

Table 4.13
Regression between DPS and MPS

Name of the Bank	Constant (a)	Regression Coefficient (b)	T-Value	Significant /Insignificant
HBL	1716.95	25.40	1.20	Insignificant
LBL	-206.48	-61.87	-2.58	Insignificant
BOK	2003.50	36.48	2.48	Insignificant
SCBL	8649.28	86.48	8.32	Significant
NIBL	116.92	-20.74	-1.53	Insignificant

(Source: Appendix III)

The Table 4.13 depicts the major output of simple regression analysis of average Market Per Share (MPS) on Dividend Per Share of the concerned banks.

As far as regression of DPS and EPS is concerned, the regression coefficient of HBL, LBL, BOK, SCBL and NIBL are 25.40, -61.87, 36.48, 86.48 and -20.74 respectively.

It indicates that a one rupee increase in EPS leads to an average of Rs.25.40, 36.48 and 86.48 increase in DPS of HBL, BOK and SCBL respectively, if the other variable remains constant. In above analysis MPS of LBL and NIBL are not affected by DPS because these banks regression coefficient are negative which is -61.87 and -20.74 respectively.

The test of t- statistics aid to include that the relationship between DPS and MPS of HBL, LBL, BOK and NIBL is insignificant since calculated T- value 1.2, -2.58, 2.48 and -1.53 of LBL, BOK and NIBL respectively is lower than the tabulated t- value (2.87), whereas the relationship between DPS and MPS of SCBL is significant since calculated T- value of SCBL (8.32) is higher than the tabulated t- value (2.87) at 5% level of significance on 4 degree of freedom.

4.3 Test of Hypothesis

4.3.1 Test of DPS among the Sample Banks

Null Hypothesis (H_0): $\mu_1 = \mu_2 = \mu_3$ i.e. There is no significance difference in DPS of the sample banks.

Alternative Hypothesis (H_0): $\mu_1 \neq \mu_2 \neq \mu_3$ i.e. There is significance difference in DPS of the sample banks.

Table 4.14
One-Way ANOVA Table for DPS

Sum of Variation	Sum of Squares	Degree of Freedom (d.f.= n-1)	Mean sum of Square	F- Ratio
Between Banks	7666.52	5-1 = 4	1916.63	11.32
Within Banks	3386.99	25-5 =20	169.35	
Total	11053.51	24		

(Source: Appendix VI)

Critical Value: The tabulated value of F at 5% level of significance for 4 and 20 d.f. is 2.87

Decision: Since the calculated F (11.32) is higher than the tabulated value of F (2.87), the Null Hypothesis (H_0) is rejected. Therefore, we can conclude that there is significance difference in DPS of sample banks.

4.3.2 Test of EPS among the Sample Banks

Null Hypothesis (H_0): $\mu_1 = \mu_2 = \mu_3$ i.e. There is no significance difference in EPS of the sample banks.

Alternative Hypothesis (H_0): $\mu_1 \neq \mu_2 \neq \mu_3$ i.e. There is significance difference in EPS of the sample banks.

Table 4.15
One-Way ANOVA Table for EPS

Sum of Variation	Sum of Squares	Degree of Freedom (d.f.= n-1)	Mean sum of Square	F- Ratio
Between Banks	8283.61	5-1 = 4	2070.90	16.77
Within Banks	2469.25	25-5 = 20	123.46	
Total	10752.86	24		

(Source: Appendix VI)

Critical Value: The tabulated value of F at 5% level of significance for 4 and 20 d.f. is 2.87

Decision: Since the calculated F (16.77) is higher than the tabulated value of F (2.87), the Null Hypothesis (H_0) is rejected. Therefore, we can conclude that there is significance difference in EPS of sample banks.

4.3.3 Test of DPR among the Sample Banks

Null Hypothesis (H_0): $\mu_1 = \mu_2 = \mu_3$ i.e. There is no significance difference in DPR of the sample banks.

Alternative Hypothesis (H_0): $\mu_1 \neq \mu_2 \neq \mu_3$ i.e. There is significance difference in DPR of the sample banks.

Table 4.16
One-Way ANOVA Table for DPR

Sum of Variation	Sum of Squares	Degree of Freedom (d.f.= n-1)	Mean sum of Square	F- Ratio
Between Banks	3066.75	5-1 = 4	766.69	1.75
Within Banks	8773.18	25-5 = 20	438.96	
Total	116176.53	24		

(Source: Appendix VI)

Critical Value: The tabulated value of F at 5% level of significance for 4 and 20 d.f. is 2.87

Decision: Since the calculated F (1.75) is less than the tabulated value of F (2.87), the Null Hypothesis (H_0) is accepted. Therefore, we can conclude that there is no significance difference in DYR of sample banks.

Major Findings:

On the basis of data the following major findings have been found

- DPS analysis shows that SCBL paid highest DPS of Rs.66 in average. It is comparatively more successful to create positive attitude of shareholders towards the bank. It consequently helps to increase the market value of shares and also helps to indicate the better performance of the bank's management. And, the CV. analysis shows BOK has (CV 39.24) as the highest inconsistency in dividend payment than other banks and the lowest average DPS (Rs. 11.81). The dividend payment by SCBL (CV. 31.42%) is less inconsistent than other banks.
- In average SCBL has the highest EPS of Rs. 79.02 and C.V. 22.55% shows there is more fluctuation in EPS , So, SCBL's profitability of common

shareholders' investment is better than other selected banks and EPS of LBL has the more consistency among the selected banks as C.V. is 7.52%.

- The average Dividend Payout Ratio of selected banks shows that SCBL has highest DPR of 82.35% and more consistency in DPR than other banks. C.V. 10.20% of SCBL shows it has less inconsistency.
- SCBL has the highest MPS of Rs. 2941.60 in average and LBL has the lowest average MPS of Rs. 524.20. The analysis of Coefficient of Variation shows that MPS of HBL is more consistent than other banks as C.V. is 54.19%.
- The average EY of NIBL (6.18%) is highest among all the sample banks and SCBL has the lowest average EY that is 3.14%. The C.V. of LBL 45.87% shows highest inconsistency among the selected banks.
- The dividend yield ratio shows that 3.83% of the average market price of BOK was provided as dividend during the period taken for study and NIBL has highest C.V. of 61.87% shows more inconsistency in dividend yield. HBL enjoyed 3.98% of average DY which is highest among the selected banks and SCBL has 25.69% of C.V. which shows more consistency in DY.
- Highest average P/E ratio of SCBL considered that the investor paid high amounts among the other banks to gain one rupee of earnings. NIBL has the lowest P/E ratio 19.31% in average. It can be considered that the investor of NIBL paid fewer amounts among the other banks to gain one rupee of earning.
- There is insignificant relationship between DPS and MPS of HBL, LBL and NIBL banks. BOK and SCBL they have significant relationship between DPS and MPS. LBL and NIBL have negative correlation whereas BOK and HBL were positively correlated.
- EPS and MPS of HBL, BOK, SCBL and NIBL were positively correlated. But, only LBL and NIBL has negative correlation between EPS and MPS. Similarly the relationship between EPS and MPS of LBL and NIBL were insignificant and all three banks were positively correlated.
- The HBL, LBL, BOK, SCBL and NIBL were positively correlated. And, there is significant relationship between EPS and DPS of BOK and SCBL and other three banks have insignificant relationship.
- The regression analysis between DPS and MPS shows that HBL, BOK and SCBL have positive regression coefficient which is 25.40, 36.48 and 86.48 respectively, it indicates that a one rupee increase in DPS leads to an average

of Rs. 25.40, 36.48 and 86.48 increases in MPS of respective banks. The dividend of LBL and NIBL are not affected by MPS because these banks regression coefficient are negative.

- Regression analysis between EPS and MPS shows all the three banks HBL, BOK and SCBL have positive regression coefficient of 33.59, 68.04 and 100.13 respectively. It indicates that a one rupee increase in EPS leads to an average of 33.59, 68.04 and 100.13 increases in MPS of HBL, BOK and SCBL respectively. Negative regression coefficient of LBL and NIBL shows that EPS are not affected by MPS.
- The regression analysis between EPS and DPS shows that the regression coefficient of HBL, LBL, BOK, SCBL and NIBL are 0.584, 2.19, 1.61, 1.15 and 0.362 respectively. This indicates that a one rupee increase in EPS leads to an average of Rs. 0.584, 2.19, 1.61, 1.15 and 0.362 increase in MPS of HBL, LBL, BOK, SCBL and NIBL respectively.

CHAPTER V

SUMMARY CONCLUSION AND RECOMMENDATION

5.1 Summary

Dividend policy decision is undoubtedly one of three major decision of financial management. It is right say that dividend policy decision affects the operation and prosperity of a financial company because it has the power to influence other two decisions namely capital structure decision and investment decision. An investor expect two type of return namely, capital gain and dividend, by investing in equity capital or ordinary shares. Therefore, it is justified to hold that a clearly defined and effectively manage dividend policy is required in all financial companies to fulfill the shareholders expectations with that of corporate growth from internally generated funds. Therefore, the funds that could not be used due to lack of investment opportunities would be better to be distributed as dividend, since shareholders have investment opportunities elsewhere.

There are different factors that affects the dividend policy such earnings, past dividends, availability of cash, concern about maintaining or increasing stock price, investment opportunities in the bank and restrictions in bond indenture or loan agreement etc. These factors indicate the financial position of the banks. If the bank has good performance in terms of these factors, it will be able to provide returns in the form of dividends to the shareholders.

The study mainly aims to analyze the existing dividend practices of sample banks. Its specific objectives are to (i) analyzes the relationship of dividend with earning per share and market price per share. (ii) Analyze the existing dividend practices of sample banks in terms of DPS, EPS, DPR, DY and MPS. (iii) Analyze the impact of dividend policy on market price of share. (iv) Find out the significance difference between mean of DPS, EPS, and DPR of sample Commercial banks.

Considering time and resource constraints only five commercial banks namely HBK, LBL, BOK, SCBL, NIBL have been selected as sample banks in study to fulfill the objectives of studying dividend policy decision and other factors related to dividend. The study period covers only last five years from 2008/09 to 2012/13. The available

secondary data have been analyzed using various financial and statistical tools in this study. Therefore, the reliability of the conclusions of this study is determined on the accuracy of secondary data.

Most of the things about dividend policy and brief introduction of this study has been presented in first chapter and available literature review is mentioned in second chapter. Research methodology is mentioned in third chapter. All available secondary data are presented and analyzed in fourth chapter. In the fifth chapter summary, conclusion and recommendation is mentioned.

5.2 Conclusion

The above-mentioned major findings led this study to conclude that there are differences in financial position of high dividend paying and low dividend paying companies. Banks market price per share is highly affected by dividend policy. Liquidity position is important factor while adopting dividend policy. The major motive of cash dividend of commercial bank is to convey information to shareholders that the company is doing well. The dividend practices followed of Nepalese commercial bank is payment of dividend after financing in appropriate investment opportunities. Chief executive officer is the most influential in developing the dividend decision in Nepalese commercial banks. Banks reexamine their dividend policy in Nepalese enterprises. The above mentioned secondary data analysis helps to conclude that SCBL bank has higher earning capacity and paying more dividend in Rupees than other sample banks. Similarly on the basis of average dividend payout ratio, HBL bank is paying higher portion of its earning as dividend since the average DPR of HBL is higher than other sample banks. Likewise, investors of HBL are investing higher amounts in the market than other sample banks in order to gain per Rupee earning. Average MPS of SCBL is greater than other sample banks. Thus, it can be concluded that HBL was more successful in comparison. Whereas average DY of LBL is providing more percentage of its market value per share than other sample banks. Similarly, average earning yield ratio of NIBL is greater than other sample banks, which means NIBL is more efficient to generate earning on the basis of market price.

HBL and SCBL has positive correlation whereas LBL, BOK, NIBL were negative correlation between DPS and MPS. EPS and MPS of HBL, BOK, SCBL and NIBL were positively correlated. But, only LBL has negative correlation. HBL, SCBL and NIBL were positive correlated and LBL and BOK were negative correlated between EPS and DPS.

5.3 Recommendations

Based on the major findings of the study of dividends and share prices in Nepal, some important suggestions have been recommended.

- There is lack of rules binding companies to pay dividend. So, the government of Nepal, SEBON and NEPSE should act in favor of the investor and should bind through such legal provision so that the profit earning companies should distribute certain of their earning as dividend.
- Most of the banks have fluctuation in Dividend per share, Earning per share, Earning per share, Dividend yield, Dividend payout ratio and share price in terms of coefficient of variation. Such fluctuation increases the risk position of the investors.
- The legal rules and regulation should be in factor of investors to exercise the dividend practice and to promote the shareholder's rights.
- The DPS analysis shows that there is no consistence in dividend policy in all the selected banks. Therefore, these banks need to create somehow paying reasonable DPS every year. It is because higher DPS creates positive attitudes of shareholders towards the company. This consequence helps to increase the market value of shares. This consequently helps to increase the market value of share.
- EPS of selected banks seem to be in fluctuation trend; therefore these banks should search the fruitful investment opportunities and plan for profit maximization.
- The bank should have long term vision regarding earnings and dividend payment that helps to cope with challenging competitive situation of taking decision.

- Considering the shareholders interest and reaction, the pre-determined policies should be re-viewed in the changed context.
- Sample companies have not given proper attention toward the shareholders expectation and desires. Therefore, companies should give proper attention to the shareholders' will accordingly.
- Since the dividend policy of the organization is very important but due to lack of proper plan and strategy the dividend payment is not stable. It is highly fluctuating in the sample companies. Therefore, companies should try to adopt appropriate and clearly defined dividend policy. It helps to the investors in deciding whether to buy or not the share of particular company. It also helps to build good image in stock market. The tendency of management interference in policy matters should be eliminated.

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APPENDICES

Appendix –I

1) Calculation of Dividend Payout Ratio (DPR)

$$DPR = \frac{DPS}{EPS}$$

(In Rs.)

Year	HBL			LBL			BOK			SCBL		NIBL			
	DPS	EPS	DPR	DPS	EPS	DPR	DPS	EPS	DPR	DPS	EPS	DPR	DPS	EPS	DPR
2008/09	43.56	61.9	70.37	5.26	20.7	25.41	47.74	54.68	87.31	100	109.99	90.92	20	37.42	53.45
2009/10	36.84	31.8	115.85	13	24.12	53.90	30	43.08	69.64	70	77.65	90.15	25	52.55	47.57
2010/11	36.84	44.66	82.49	15.79	23.25	67.91	34.75	44.51	78.07	50	69.51	71.93	50	48.84	102.38
2011/12	28.42	39.94	71.16	10	21.55	46.60	26.32	37.88	69.48	60	82.64	90.15	30	27.60	108.70
2012/13	15	34.19	43.87	15	24.75	60.61	14.74	36.64	40.23	50	76.10	71.93	35	46.20	75.76

Source: Annual report of HBL, LBL, BOK, SCBL, NIBL

2) Calculation of Price Earnings Ratio

$$P/E \text{ Ratio} = \frac{MPS}{EPS}$$

(In Rs.)

Year	HBL			LBL			BOK			SCBL			NIBL		
	MPS	EPS	P/E Ratio	MPS	EPS	P/E Ratio	MPS	EPS	P/E Ratio	MPS	EPS	P/E Ratio	MPS	EPS	P/E Ratio
2008/09	1760.00	61.9	28.43	1062	20.7	51.31	1825	54.68	33.38	6010	109.99	54.64	1388	37.42	37.10
2009/10	816.00	31.8	25.66	570	24.12	23.63	840	43.08	19.50	3279	77.65	42.23	705	52.55	13.42
2010/11	575.00	44.66	12.86	340	23.25	14.62	570	44.51	12.81	1800	69.51	25.90	515	48.84	10.54

2011/12	653.00	39.94	16.35	340	21.55	15.78	628	37.88	16.58	1799	72.60	24.78	511	27.60	18.51
2012/13	700.00	34.19	20.47	309	24.75	12.48	553	36.64	15.09	1820	65.70	27.70	784	46.20	16.97

3) Calculation of Dividend Yield Ratio

$$DYRatio = \frac{DPS}{MPS}$$

(In Rs.)

Year	HBL			LBL			BOK			SCBL			NIBL		
	DPS	MPS	DYR	DPS	MPS	DYR	DPS	MPS	DYR	DPS	MPS	DYR	DPS	MPS	DYR
2008/09	43.56	1760	2.48	5.26	1062	4.95	47.74	1825	2.62	100	6010	1.66	20	1388	1.45
2009/10	36.84	816	4.51	13	570	2.28	30	840	3.57	70	3279	2.13	25	705	3.55
2010/11	36.84	575	6.41	15.79	340	4.64	34.75	570	6.09	50	1800	2.78	50	515	9.71
2011/12	28.42	653	4.35	10	340	2.94	26.32	840	4.19	60	1799	3.34	30	511	5.87
2012/13	15	700	2.14	15	309	4.85	14.74	570	2.67	50	1820	2.75	35	784	4.46

4) Calculation of Earning Yield Ratio

$$EYRatio = \frac{EPS}{MPS}$$

(In Rs.)

Year	HBL			LBL			BOK			SCBL			NIBL		
	EPS	MPS	EYR	EPS	MPS	EYR	EPS	MPS	EYR	EPS	MPS	EYR	EPS	MPS	EYR
2008/09	61.9	1760	3.52	20.7	1062	1.95	54.68	1825	2.99	109.99	6010	1.83	37.42	1388	2.70
2009/10	31.8	816	3.90	24.12	570	4.23	43.08	840	5.13	77.65	3279	2.37	52.55	705	7.45
2010/11	44.66	575	7.77	23.25	340	6.84	44.51	570	7.81	69.51	1800	3.86	48.84	515	9.48
2011/12	39.94	653	6.12	21.55	340	6.34	37.88	628	6.03	72.60	1799	4.04	27.60	511	5.40
2012/13	34.19	700	4.88	24.75	309	8.01	36.64	553	6.63	65.70	1820	3.61	46.20	784	5.89

Appendix –II

1) Sample Calculation of mean, Standard Deviation (S.D.) and Coefficient of Variation (C.V.) of DPS of various banks in different year.

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	43.56	5.26	47.74	100	20
2009/10	36.84	13.00	30.00	70	25
2010/11	36.84	15.79	34.75	50	50
2011/12	28.42	10.00	26.32	60	30
2012/13	15.00	15.00	14.74	50	35
Total	160.66	59.05	153.55	330	160

$$\text{Mean } \bar{X} = \frac{\sum X}{N}$$

$$\text{HBL} = \frac{160.66}{5} = 32.13$$

$$\text{LBL} = \frac{59.05}{5} = 11.81$$

$$\text{BOK} = \frac{153.55}{5} = 30.71$$

$$\text{SCBL} = \frac{330}{5} = 66$$

$$\text{NIBL} = \frac{160}{5} = 32$$

$$\text{Standard Deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{X})^2}{n-1}}$$

$$\text{HBL} =$$

$$\sqrt{\frac{\sum(43.56-32.13)^2+(36.84-32.13)^2+(36.84-32.13)^2+(28.42-32.13)^2+(15-32.13)^2}{4}}$$

$$\text{HBL} = 10.98$$

$$\text{LBL} = 4.29$$

$$\text{BOK} = 12.05$$

$$\text{SCBL} = 20.74$$

$$\text{NIBL} = 11.51$$

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

$$\text{HBL} = \frac{10.98}{32.13} \times 100 = 34.17$$

$$\text{LBL} = 36.33$$

$$\text{BOK} = 39.24$$

$$\text{SCBL} = 31.42$$

$$\text{NIBL} = 35.97$$

2. Sample Calculation of mean, Standard Deviation (S.D.) and Coefficient of Variation (C.V.) of EPS of various banks in different year.

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	61.90	20.70	54.68	109.99	37.42
2009/10	31.80	24.12	43.08	77.65	52.55
2010/11	44.66	23.25	44.51	69.51	48.84
2011/12	39.94	21.55	37.88	72.60	27.60
2012/13	34.19	24.75	36.64	65.70	46.20
Total	212.49	114.37	216.79	395.12	212.61

$$\text{Mean } \bar{X} = \frac{\sum X}{N}$$

$$\text{HBL} = \frac{212.49}{5} = 42.50$$

$$\text{LBL} = \frac{114.37}{5} = 22.87$$

$$\text{BOK} = \frac{216.79}{5} = 44.36$$

$$\text{SCBL} = \frac{395.12}{5} = 79.02$$

$$\text{NIBL} = \frac{212.61}{5} = 42.52$$

$$\text{Standard Deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{X})^2}{n-1}}$$

$$\text{HBL} =$$

$$\sqrt{\frac{\sum(61.90-42.50)^2+(31.80-42.50)^2+(44.66-42.50)^2+(39.94-42.50)^2+(34.19-42.50)^2}{4}}$$

$$\text{HBL} = 11.95$$

$$\text{LBL} = 1.72$$

$$\text{BOK} = 7.24$$

$$\text{SCBL} = 17.82$$

$$\text{NIBL} = 10.03$$

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

$$\text{HBL} = \frac{11.95}{42.50} \times 100 = 28.12$$

$$\text{LBL} = 7.52$$

$$\text{BOK} = 16.32$$

$$\text{SCBL} = 22.55$$

$$\text{NIBL} = 23.59$$

3. Sample Calculation of mean, Standard Deviation (S.D.) and Coefficient of Variation (C.V.) of MPS of various banks in different year.

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	1760	1062	1825	6010	1388
2009/10	816	570	840	3279	705
2010/11	575	340	570	1800	515
2011/12	653	340	628	1799	511
2012/13	700	309	553	1820	784
Total	4504	2621	4416	14708	3903

$$\text{Mean } \bar{X} = \frac{\sum X}{N}$$

$$\text{HBL} = \frac{4504}{5} = 900.80$$

$$\text{LBL} = \frac{2621}{5} = 524.20$$

$$\text{BOK} = \frac{4416}{5} = 883.20$$

$$\text{SCBL} = \frac{14708}{5} = 2941.60$$

$$\text{NIBL} = \frac{3903}{5} = 780.60$$

$$\text{Standard Deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{X})^2}{n-1}}$$

$$\text{HBL} =$$

$$\sqrt{\frac{\sum(1760-900.80)^2+(816-900.80)^2+(575-900.80)^2+(653-900.80)^2+(700-900.80)^2}{4}}$$

$$\text{HBL} = 488.18$$

$$\text{LBL} = 318.40$$

$$\text{BOK} = 538.77$$

$$\text{SCBL} = 1830.01$$

$$\text{NIBL} = 359.82$$

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

$$\text{HBL} = \frac{488.18}{900.80} \times 100 = 54.19$$

$$\text{LBL} = 60.74$$

$$\text{BOK} = 61.00$$

$$\text{SCBL} = 62.21$$

$$\text{NIBL} = 69.15$$

4. Sample Calculation of mean, Standard Deviation (S.D.) and Coefficient of Variation (C.V.) of DPR of various banks in different year.

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	70.37	25.41	87.31	90.92	53.45
2009/10	115.85	53.90	69.64	90.15	47.57
2010/11	82.49	67.91	78.07	71.93	102.38
2011/12	71.16	46.60	69.48	82.64	108.7
2012/13	43.87	60.61	40.23	76.10	75.76
Total	383.74	254.43	344.73	411.74	387.86

$$\text{Mean } \bar{X} = \frac{\sum X}{N}$$

$$\text{HBL} = \frac{383.74}{5} = 76.75$$

$$\text{LBL} = \frac{254.43}{5} = 50.89$$

$$\text{BOK} = \frac{344.73}{5} = 68.95$$

$$\text{SCBL} = \frac{411.74}{5} = 82.35$$

$$\text{NIBL} = \frac{387.86}{5} = 77.57$$

$$\text{Standard Deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{X})^2}{n-1}}$$

$$\text{HBL} =$$

$$\sqrt{\frac{\sum(70.37-76.75)^2+(115.85-76.75)^2+(82.49-76.75)^2+(71.16-76.75)^2+(43.87-76.75)^2}{4}}$$

$$\text{HBL} = 26.05$$

$$\text{LBL} = 16.29$$

$$\text{BOK} = 17.65$$

$$SCBL = 8.40$$

$$NIBL = 27.70$$

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

$$HBL = \frac{26.05}{76.75} \times 100 = 33.94$$

$$LBL = 32.01$$

$$BOK = 25.60$$

$$SCBL = 10.20$$

$$NIBL = 35.71$$

5. Sample Calculation of mean, Standard Deviation (S.D.) and Coefficient of Variation (C.V.) of DYR of various banks in different year.

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	2.48	4.95	2.62	1.66	1.44
2009/10	4.51	2.28	3.57	2.13	3.55
2010/11	6.41	4.64	6.09	2.78	9.71
2011/12	4.35	2.94	4.19	3.34	5.58
2012/13	2.14	4.85	2.67	2.75	4.46
Total	19.89	19.66	19.14	12.66	24.74

$$\text{Mean } \bar{X} = \frac{\sum X}{N}$$

$$HBL = \frac{19.89}{5} = 3.98$$

$$LBL = \frac{19.66}{5} = 3.93$$

$$\text{BOK} = \frac{19.14}{5} = 3.83$$

$$\text{SCBL} = \frac{12.66}{5} = 2.53$$

$$\text{NIBL} = \frac{24.74}{5} = 4.95$$

$$\text{Standard Deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{X})^2}{n-1}}$$

$$\text{HBL} =$$

$$\sqrt{\frac{\sum(2.48-3.98)^2+(4.51-3.98)^2+(6.41-3.98)^2+(4.35-3.98)^2+(2.14-3.98)^2}{4}}$$

$$\text{HBL} = 1.73$$

$$\text{LBL} = 1.23$$

$$\text{BOK} = 1.42$$

$$\text{SCBL} = 0.65$$

$$\text{NIBL} = 3.06$$

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

$$\text{HBL} = \frac{1.73}{3.98} \times 100 = 43.47$$

$$\text{LBL} = 31.30$$

$$\text{BOK} = 37.08$$

$$\text{SCBL} = 25.69$$

$$\text{NIBL} = 61.82$$

6. Sample Calculation of mean, Standard Deviation (S.D.) and Coefficient of Variation (C.V.) of PE Ratio of various banks in different year.

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	28.43	51.31	33.38	54.64	37.10
2009/10	25.66	23.63	19.50	42.23	13.42
2010/11	12.86	14.62	12.81	25.90	10.54
2011/12	16.35	15.78	16.58	24.78	18.51
2012/13	20.47	12.48	15.09	27.70	16.97
Total	103.77	117.82	97.36	175.25	96.54

$$\text{Mean } \bar{X} = \frac{\sum X}{N}$$

$$\text{HBL} = \frac{103.77}{5} = 20.75$$

$$\text{LBL} = \frac{117.82}{5} = 23.56$$

$$\text{BOK} = \frac{97.36}{5} = 19.47$$

$$\text{SCBL} = \frac{175.25}{5} = 35.05$$

$$\text{NIBL} = \frac{96.54}{5} = 19.31$$

$$\text{Standard Deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{X})^2}{n-1}}$$

$$\text{HBL} =$$

$$\sqrt{\frac{\sum(28.43-20.75)^2+(25.66-20.75)^2+(12.86-20.75)^2+(16.35-20.75)^2+(20.47-20.75)^2}{4}}$$

$$\text{HBL} = 6.42$$

$$\text{LBL} = 16.07$$

$$\text{BOK} = 8.15$$

$$\text{SCBL} = 13.02$$

$$\text{NIBL} = 10.42$$

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

$$\text{HBL} = \frac{6.42}{20.75} \times 100 = 30.94$$

$$\text{LBL} = 68.21$$

$$\text{BOK} = 41.86$$

$$\text{SCBL} = 37.15$$

$$\text{NIBL} = 53.96$$

7. Sample Calculation of mean, Standard Deviation (S.D.) and Coefficient of Variation (C.V.) of Earning Yield Ratio (EYR) of various banks in different year.

Year	HBL	LBL	BOK	SCBL	NIBL
2008/09	3.52	1.95	2.99	1.83	2.7
2009/10	3.90	4.23	5.13	2.37	7.45
2010/11	7.77	6.84	7.81	3.86	9.48
2011/12	6.12	6.34	6.03	4.04	5.40
2012/13	4.88	8.01	6.63	3.61	5.89
Total	26.19	27.37	28.59	15.71	30.92

$$\text{Mean } \bar{X} = \frac{\sum X}{N}$$

$$\text{HBL} = \frac{26.19}{5} = 5.24$$

$$\text{LBL} = \frac{27.37}{5} = 5.42$$

$$\text{BOK} = \frac{28.59}{5} = 5.72$$

$$\text{SCBL} = \frac{15.71}{5} = 3.14$$

$$\text{NIBL} = \frac{30.92}{5} = 6.18$$

$$\text{Standard Deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{X})^2}{n-1}}$$

$$\text{HBL} =$$

$$\sqrt{\frac{\sum(3.52-5.24)^2+(3.90-5.24)^2+(7.77-5.24)^2+(6.12-5.24)^2+(4.88-5.24)^2}{4}}$$

$$\text{HBL} = 1.74$$

$$\text{LBL} = 2.50$$

$$\text{BOK} = 1.81$$

$$\text{SCBL} = 0.98$$

$$\text{NIBL} = 2.52$$

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

$$\text{HBL} = \frac{1.74}{5.24} \times 100 = 33.21$$

$$\text{LBL} = 45.87$$

$$\text{BOK} = 31.64$$

$$\text{SCBL} = 31.21$$

$$\text{NIBL} = 40.78$$

Appendix –III

Calculation of Correlation and Regression Analysis between DPS and MPS

a) Himalayan Bank Limited (HBL)

Calculated table of correlation coefficient between DPS and MPS

Year	DPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	43.56	1760.00	76665.60	1897.47	3097600.00
2009/10	36.84	816.00	30061.44	1357.19	665856.00
2010/11	36.84	575.00	21183.00	1357.19	330625.00
2011/12	28.42	653.00	18558.26	807.70	426409.00
2012/13	15.00	700.00	10500.00	225.00	490000.00
Σ	160.66	4504.00	156968.30	5644.55	5010490.00

Here, N = 5

$$\begin{aligned}
 R &= \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \\
 &= \frac{5 \times 156968.30 - 160.66 \times 4504}{\sqrt{5 \times 5644.55 - (160.66)^2} \sqrt{5 \times 5010490 - (4504)^2}} \\
 &= 0.571
 \end{aligned}$$

$$\begin{aligned}
 \text{And Probable Error (P.E.)} &= \frac{0.6745 \times (1 - r^2)}{\sqrt{n}} \\
 &= \frac{0.6745 \times [1 - (0.571)^2]}{\sqrt{5}}
 \end{aligned}$$

$$\text{P.E.} = 0.203$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 156968.30 - 160.66 \times 4504}{5 \times 5644.55 - (160.66)^2}$$

$$b = 25.40$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{4504}{5} + 25.40 \times \frac{160.66}{5}$$

$$a = 900.80 + 816.15$$

$$a = 1716.95$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.571 \times \sqrt{5-2}}{\sqrt{1-0.571^2}}$$

$$t = 1.20$$

b) Laxmi Bank Limited (LBL)

Calculated table of correlation coefficient between DPS and MPS

Year	DPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	5.26	1062	5586.12	27.6676	1127844
2009/10	13	570	7410	169	324900
2010/11	15.79	340	5368.6	249.3241	115600
2011/12	10	340	3400	100	115600
2012/13	15	309	4635	225	95481
Σ	59.05	2621	26399.72	770.99	1779425

Here, N = 5

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

$$= \frac{5 \times 26399.72 - 59.05 \times 2621}{\sqrt{5 \times 770.99 - (59.05)^2} \sqrt{5 \times 1779425 - (2621)^2}}$$

$$= -0.83$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1-r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times [1 - (-0.83)^2]}{\sqrt{5}}$$

$$\text{P.E.} = 0.094$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 26399.72 - 59.05 \times 2621}{5 \times 770.99 - (59.05)^2}$$

$$b = -61.87$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{2621}{5} + (-61.87) \times \frac{59.05}{5}$$

$$a = 524.2 - 730.68$$

$$a = -206.48$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{(-0.83) \times \sqrt{5-2}}{\sqrt{1-(-0.83^2)}}$$

$$t = -2.58$$

c) Bank of Kathmandu (BOK)

Calculated table of correlation coefficient between DPS and MPS

Year	DPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	47.74	1825	87125.50	2279.11	3330625
2009/10	30.00	840	25200	900	705600
2010/11	34.75	570	19807.50	1207.56	324900
2011/12	26.32	628	16528.96	225692.74	394384
2012/13	14.74	553	8151.22	217.27	305809
Σ	153.55	4416	156813.18	5296.68	5061318

Here, N = 5

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

$$= \frac{5 \times 156813.18 - 153.55 \times 4416}{\sqrt{5 \times 5296.68 - (153.55)^2} \sqrt{5 \times 5061318 - (4416)^2}}$$

$$= 0.82$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1-r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1-0.82^2)}{\sqrt{5}}$$

$$\text{P.E.} = 0.099$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 156813.18 - 153.55 \times 4416}{5 \times 5296.68 - (153.55)^2}$$

$$b = 36.48$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{4416}{5} + 36.48 \times \frac{153.55}{5}$$

$$a = 883.20 + 1120.30$$

$$a = 2003.50$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.52 \times \sqrt{5-2}}{\sqrt{1-0.82^2}}$$

$$t = 2.48$$

d) Standard Chartered Bank Limited (SCBL)

Calculated table of correlation coefficient between DPS and MPS

Year	DPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	100	6010	601000	10000	36120100
2009/10	70	3279	229530	4900	10751841
2010/11	50	1800	90000	2500	3240000
2011/12	60	1799	107940	3600	3236401
2012/13	50	1820	91000	2500	3312400
Σ	330	14708	1119470	23500	56660742

Here, N = 5

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

$$= \frac{5 \times 1119470 - 330 \times 14708}{\sqrt{5 \times 23500 - (330)^2} \sqrt{5 \times 56660742 - (14708)^2}}$$

$$= 0.979$$

And Probable Error (P.E.) = $\frac{0.6745 \times (1-r^2)}{\sqrt{n}}$

$$= \frac{0.6745 \times (1-0.979^2)}{\sqrt{5}}$$

$$P.E. = 0.013$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 1119470 - 330 \times 14708}{5 \times 23500 - (330)^2}$$

$$b = 86.48$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{14708}{5} + 86.48 \times \frac{330}{5}$$

$$a = 2941.60 + 5707.68$$

$$a = 8649.28$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.979 \times \sqrt{5-2}}{\sqrt{1-0.979^2}}$$

$$t = 8.32$$

e) Nepal Investment Bank Limited (NIBL)

Calculated table of correlation coefficient between DPS and MPS

Year	DPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	20	1388	27760	400	1926544
2009/10	25	705	17625	625	497025
2010/11	50	515	25750	2500	265225
2011/12	30	511	15330	900	261121

2012/13	35	784	27440	1225	614656
Σ	160	3903	113905	5650	3564571

Here, $N = 5$

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

$$= \frac{5 \times 113905 - 160 \times 3903}{\sqrt{5 \times 5650 - (160)^2} \sqrt{5 \times 3564571 - (3903)^2}}$$

$$= -0.663$$

And Probable Error (P.E.) = $\frac{0.6745 \times (1 - r^2)}{\sqrt{n}}$

$$= \frac{0.6745 \times [1 - (-0.663)^2]}{\sqrt{5}}$$

$$P.E. = 0.17$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and b are given by

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

$$\Sigma Y = a \Sigma Y + b \Sigma X^2$$

Solving these two normal equations, we get,

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

$$b = \frac{5 \times 113905 - 160 \times 3903}{5 \times 5650 - (160)^2}$$

$$b = -20.74$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{3903}{5} + (-20.74) \times \frac{160}{5}$$

$$a = 780.6 - 663.68$$

$$a = 116.92$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{-0.663 \times \sqrt{5-2}}{\sqrt{1-(-0.663)^2}}$$

$$t = -1.53$$

Appendix –IV

Calculation of Correlation Coefficient and Regression Analysis
between EPS and MPS

a) Himalayan Bank Limited (HBL)

Calculated table of correlation coefficient between EPS and MPS

Year	EPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	61.9	1760	108,944.00	3,831.61	3,097,600
2009/10	31.8	816	25,948.80	1,011.24	665,856
2010/11	44.66	575	25,679.50	1,994.52	330,625
2011/12	39.94	653	26,088.82	1,595.20	426,409
2012/13	34.19	700	23,933	1,168.95	490,000
Σ	212.49	4504	210,594.12	9,601.53	5,010,490

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

$$= \frac{5 \times 210,594.12 - 212.49 \times 4504}{\sqrt{5 \times 9,601.53 - (212.49)^2} \sqrt{5 \times 5,010,490 - (4504)^2}}$$

$$= 0.822$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1 - r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1 - 0.822^2)}{\sqrt{5}}$$

$$\text{P.E.} = 0.098$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 210,594.12 - 212.49 \times 4504}{5 \times 9,601.53 - (212.49)^2}$$

$$b = 33.59$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{4504}{5} + 33.59 \times \frac{212.94}{5}$$

$$a = 900.80 + 1430.53$$

$$a = 2331.33$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.822 \times \sqrt{5-2}}{\sqrt{1-0.822^2}}$$

$$t = 2.50$$

b) Laxmi Bank Limited (LBL)

Calculated table of correlation coefficient between EPS and MPS

Year	EPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	20.7	1062	21,983.40	428.49	1,127,844
2009/10	24.12	570	13,748.40	581.77	324,900
2010/11	23.25	340	7,905	540.56	115,600
2011/12	21.55	340	7,320	464.40	115,600
2012/13	24.75	309	7,647.75	612.56	95,481
Σ	114.37	2621	58,611.55	2,627.80	1,779,425

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

$$= \frac{5 \times 58,611.55 - 114.37 \times 2621}{\sqrt{5 \times 2,627.80 - (114.37)^2} \sqrt{5 \times 1,779,425 - (2621)^2}}$$

$$= -0.62$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1-r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times [1 - (-0.62)^2]}{\sqrt{5}}$$

$$\text{P.E.} = 0.186$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 58,611.55 - 114.37 \times 2621}{5 \times 2,627.80 - (114.37)^2}$$

$$b = -114.63$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{2621}{5} + (-114.63) \times \frac{114.37}{5}$$

$$a = 524.20 - 2622.05$$

$$a = -2097.85$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{-0.62 \times \sqrt{5-2}}{\sqrt{1-(-0.62)^2}}$$

$$t = -1.37$$

c) Bank Of Kathmandu (BOK)

Calculated table of correlation coefficient between EPS and MPS

Year	EPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	54.68	1825	99791	2,989.90	3330625
2009/10	43.08	840	36187.2	1,855.89	705600
2010/11	44.51	570	25370.7	1,981.14	324900
2011/12	37.88	628	23788.64	1434.89	394384
2012/13	36.64	553	20261.92	1342.49	305809
Σ	216.79	4416	205399.46	9604.31	5061318

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

$$= \frac{5 \times 205399.46 - 216.79 \times 4416}{\sqrt{5 \times 9604.31 - (216.79)^2} \sqrt{5 \times 5061318 - (4416)^2}}$$

$$= 0.903$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1 - r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1 - 0.903^2)}{\sqrt{5}}$$

$$\text{P.E.} = 0.056$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and b are given by

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

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

Solving these two normal equations, we get,

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

$$b = \frac{5 \times 205399.46 - 216.79 \times 4416}{5 \times 9604.31 - (216.79)^2}$$

$$b = 68.04$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{4416}{5} + 68.04 \times \frac{216.79}{5}$$

$$a = 883.2 + 2950.08$$

$$a = 3833.28$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.903 \times \sqrt{5-2}}{\sqrt{1-(0.903)^2}}$$

$$t = 3.64$$

d) Standard Chartered Bank Limited (SCBL)

Calculated table of correlation coefficient between EPS and MPS

Year	EPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	109.99	6010	661039.9	12,097.80	36120100
2009/10	77.65	3279	254614.35	6,029.52	10751841

2010/11	69.51	1800	125118	4,831.64	3240000
2011/12	72.60	1799	130607.4	5270.76	3236401
2012/13	65.370	1820	118973.40	4273.23	3312400
Σ	395.12	14708	1290353.05	32502.95	56660742

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

$$= \frac{5 \times 1290353.05 - 395.12 \times 14708}{\sqrt{5 \times 32502.95 - (395.12)^2} \sqrt{5 \times 56660742 - (14708)^2}}$$

$$= 0.978$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1 - r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1 - 0.978^2)}{\sqrt{5}}$$

$$\text{P.E.} = 0.131$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and b are given by

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

$$\Sigma Y = a\Sigma X + b\Sigma X^2$$

Solving these two normal equations, we get,

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

$$b = \frac{5 \times 1290353.05 - 395.12 \times 14708}{5 \times 32502.95 - (395.12)^2}$$

$$b = 100.13$$

Similarly,

$$a = \frac{\Sigma Y}{n} + bx \frac{\Sigma X}{n}$$

$$a = \frac{14708}{5} + 100.13 \times \frac{395.12}{5}$$

$$a = 2941.60 + 7912.67$$

$$a = 10854.27$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.978 \times \sqrt{5-2}}{\sqrt{1-0.978^2}}$$

$$t = 8.12$$

e) Nepal Investment Bank Limited (NIBL)

Calculated table of correlation coefficient between EPS and MPS

Year	EPS(X)	MPS(Y)	XY	X ²	Y ²
2008/09	37.42	1388	51938.96	1400.26	1926544
2009/10	52.55	705	37047.75	2761.50	497025
2010/11	48.84	515	25152.6	2385.35	265225
2011/12	27.60	511	14103.60	761.76	261121
2012/13	46.20	784	36220.80	2134.44	614650
Σ	212.61	3903	164463.71	9443.31	3564571

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

$$= \frac{5 \times 164463.71 - 212.61 \times 3903}{\sqrt{5 \times 9443.31 - (212.61)^2} \sqrt{5 \times 3564571 - (3903)^2}}$$

$$= -0.104$$

And Probable Error (P.E.) = $\frac{0.6745 \times (1 - r^2)}{\sqrt{n}}$

$$= \frac{0.6745 \times (1 - (-0.104)^2)}{\sqrt{5}}$$

$$P.E. = 0.298$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and b are given by

$$\begin{aligned}\Sigma Y &= na + b\Sigma X \\ \Sigma Y &= a\Sigma Y + b\Sigma X^2\end{aligned}$$

Solving these two normal equations, we get,

$$\begin{aligned}b &= \frac{n\Sigma XY - \Sigma X\Sigma Y}{n\Sigma X^2 - (\Sigma X)^2} \\ b &= \frac{5 \times 164463.71 - 212.61 \times 3903}{5 \times 9443.31 - (212.61)^2} \\ b &= -3.72\end{aligned}$$

Similarly,

$$\begin{aligned}a &= \frac{\Sigma Y}{n} + bx \frac{\Sigma X}{n} \\ a &= \frac{3903}{5} + (-3.72) \times \frac{212.61}{5} \\ a &= 780.60 - 158.18 \\ a &= 622.42\end{aligned}$$

Similarly,

$$\begin{aligned}t &= \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}} \\ &= \frac{-0.104 \times \sqrt{5-2}}{\sqrt{1-(-0.104)^2}} \\ t &= -0.181\end{aligned}$$

Appendix – V

Calculation of Correlation Coefficient and Regression Analysis
between EPS and DPS.

a) Himalayan Bank Limited (HBL)

Calculated table of correlation coefficient between EPS and DPS

Year	EPS(X)	DPS(Y)	XY	X ²	Y ²
2008/09	61.9	43.56	2696.36	3831.61	1897.47
2009/10	31.8	36.84	1171.51	1011.24	1357.19
2010/11	44.66	36.84	1645.27	1994.516	1357.189
2011/12	39.94	28.42	1135.09	1595.20	807.70
2012/13	34.19	15.00	512.85	1168.95	225.00
Σ	212.49	160.66	7161.09	9601.53	5644.55

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

$$= \frac{5 \times 7161.09 - 212.49 \times 160.66}{\sqrt{5 \times 9601.53 - (212.49)^2} \sqrt{5 \times 5644.55 - (160.66)^2}}$$

$$= 0.64$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1 - r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1 - 0.64^2)}{\sqrt{5}}$$

$$P.E = 0.178$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 7161.09 - 212.49 \times 160.66}{5 \times 9601.53 - (212.49)^2}$$

$$b = 0.584$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{160.66}{5} + 0.584 \times \frac{212.49}{5}$$

$$a = 32.132 + 24.82$$

$$a = 56.95$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.64 \times \sqrt{5-2}}{\sqrt{1-0.64^2}}$$

$$t = 1.44$$

b) Laxmi Bank Limited (LBL)

Calculated table of correlation coefficient between EPS and DPS

Year	EPS(X)	DPS(Y)	XY	X ²	Y ²
2008/09	20.7	5.26	108.882	428.49	27.67
2009/10	24.12	13	313.56	581.77	169
2010/11	23.25	15.79	367.1175	540.56	249.32
2011/12	21.55	10	215.50	464.40	100
2012/13	24.75	15	371.25	612.56	225
Σ	114.37	59.05	1376.31	2627.80	770.99

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

$$= \frac{5 \times 1376.31 - 114.37 \times 59.05}{\sqrt{5 \times 2627.80 - (114.37)^2} \sqrt{5 \times 770.99 - (59.05)^2}}$$

$$= 0.87$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1-r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1-0.87^2)}{\sqrt{5}}$$

$$\text{P.E.} = 0.733$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 1376.31 - 114.37 \times 59.05}{5 \times 2627.80 - (114.37)^2}$$

$$b = 2.19$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{59.05}{5} + 2.19 \times \frac{114.37}{5}$$

$$a = 11.81 - 50.09$$

$$a = 61.90$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.87 \times \sqrt{5-2}}{\sqrt{1-(0.87)^2}}$$

$$t = 3.06$$

c) Bank Of Kathmandu (BOK)

Calculated table of correlation coefficient between EPS and DPS

Year	EPS(X)	DPS(Y)	XY	X ²	Y ²
2008/09	54.68	47.74	2610.42	2989.90	2279.11
2009/10	43.08	30.00	1292.40	1855.89	900.00
2010/11	44.51	34.75	1546.72	1981.14	1207.56
2011/12	37.88	26.32	997.00	1434.89	692.74
2012/13	36.64	14.74	540.07	1342.49	217.27
Σ	216.79	153.55	6986.61	9604.31	529.68

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

$$= \frac{5 \times 6986.61 - 216.79 \times 153.55}{\sqrt{5 \times 9604.31 - (216.79)^2} \sqrt{5 \times 529.68 - (153.55)^2}}$$

$$= 0.954$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1-r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1-0.954^2)}{\sqrt{5}}$$

$$\text{P.E.} = 0.027$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 6986.61 - 216.79 \times 153.55}{5 \times 9604.31 - (216.79)^2}$$

$$b = 1.61$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{153.55}{5} + 1.61 \times \frac{216.79}{5}$$

$$a = 30.71 + 69.81$$

$$a = 100.52$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.954 \times \sqrt{5-2}}{\sqrt{1-0.954^2}}$$

$$t = 5.51$$

d) Standard Chartered Bank Limited (SCBL)

Calculated table of correlation coefficient between EPS and DPS

Year	EPS(X)	DPS(Y)	XY	X ²	Y ²
2008/09	109.99	100	10999	12097.80	10000
2009/10	77.65	70	5435.5	6029.52	4900
2010/11	69.51	50	3475.5	4831.64	2500
2011/12	72.60	60	4356	5270.76	3600
2012/13	65.70	50	3285	4273.23	2500
Σ	395.12	330	27551	32502.95	23500

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

$$= \frac{5 \times 27551 - 395.12 \times 330}{\sqrt{5 \times 32502.95 - (395.12)^2} \sqrt{5 \times 23500 - (330)^2}}$$

$$= 0.993$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1-r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1-0.993^2)}{\sqrt{5}}$$

$$P.E. = 0.0042$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 27551 - 395.12 \times 330}{5 \times 32502.95 - (395.12)^2}$$

$$b = 1.15$$

Similarly,

$$a = \frac{\sum Y}{n} + bx \frac{\sum X}{n}$$

$$a = \frac{330}{5} + 1.15 \times \frac{395.12}{5}$$

$$a = 66 + 90.88$$

$$a = 156.88$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.993 \times \sqrt{5-2}}{\sqrt{1-0.993^2}}$$

$$t = 14.50$$

e) Nepal Investment Bank Limited (NIBL)

Calculated table of correlation coefficient between EPS and DPS

Year	EPS(X)	DPS(Y)	XY	X ²	Y ²
2008/09	37.42	20	748.4	1400.26	400
2009/10	52.55	25	1313.75	2761.50	625
2010/11	48.84	50	2442	2385.35	2500
2011/12	27.60	30	828	761.76	900
2012/13	46.20	35	1617	2134.44	1225
Σ	212.61	160	6949.15	9443.31	5650

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

$$= \frac{5 \times 6949.15 - 212.61 \times 160}{\sqrt{5 \times 9443.31 - (212.61)^2} \sqrt{5 \times 5650 - (160)^2}}$$

$$= 0.32$$

$$\text{And Probable Error (P.E.)} = \frac{0.6745 \times (1-r^2)}{\sqrt{n}}$$

$$= \frac{0.6745 \times (1-0.32^2)}{\sqrt{5}}$$

$$\text{P.E.} = 0.271$$

Regression equation of X on Y

$$Y = a + bX$$

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression line)

According to the principle of least square, two normal equations for estimation for estimate two numerical Constant and 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,

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

$$b = \frac{5 \times 6949.15 - 212.61 \times 160}{5 \times 9443.31 - (212.61)^2}$$

$$b = 0.362$$

Similarly,

$$a = \frac{\Sigma Y}{n} + bx \frac{\Sigma X}{n}$$

$$a = \frac{160}{5} + 0.362 \times \frac{212.61}{5}$$

$$a = 32 + 15.39$$

$$a = 47.39$$

Similarly,

$$t = \frac{r \times \sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.32 \times \sqrt{5-2}}{\sqrt{1-0.32^2}}$$

$$t = 0.585$$

Appendix- VI

Test of Hypothesis

A) One way analysis of variance (ANOVA) for Dividend Per Share

Year	HBL (X_1)	LBL (X_2)	BOK (X_3)	SCBL (X_4)	NIB L (X_5)	X_1^2	X_2^2	X_3^2	X_4^2	X_5^2
2008/09	43.56	5.26	47.74	100	20	1897.47	27.7	2279.	10000	400
2009/10	36.84	13	30.00	70	25	1357.19	169	900	4900	625
2010/11	36.84	15.79	34.75	50	50	1357.19	249.3	1207.	2500	2500
2011/12	28.42	10.00	26.32	60	30	807.70	100	692.7	3600	900
2012/13	15.00	15.00	14.74	50	35	225.00	225	217.2	2500	1225
Total	160.6 6	59.05	153.5 5	330	160	5644.55	770.9 9	5296. 68	23500	5650

Here,

$$\sum X_1 = 160.66, \sum X_2 = 59.05, \sum X_3 = 153.55, \sum X_4 = 330, \sum X_5 = 160$$

$$\sum X_1^2 = 5644.55, \sum X_2^2 = 770.99, \sum X_3^2 = 5296.68, \sum X_4^2 = 23500, \sum X_5^2 = 5650$$

Note:

Value of X_1, X_2, X_3, X_4 and X_5 represent the value of Dividend per share (DPS) of five commercial Banks HBL, LBL, BOK, SCBL and NIBL respectively.

i) The total sum of all observation (T)

$$\begin{aligned} T &= \sum X_1 + \sum X_2 + \sum X_3 + \sum X_4 + \sum X_5 \\ &= 160.66 + 59.05 + 153.55 + 330 + 160 \end{aligned}$$

$$= 863.26$$

ii) The correlation factor

$$C.F. = \frac{T^2}{n} = \frac{(863.26)^2}{5} = 29808.71$$

iii) The total sum of squares

$$TSS = \sum X_1^2 + \sum X_2^2 + \sum X_3^2 + \sum X_4^2 + \sum X_5^2 - C.F.$$

$$= 5644.55 + 770.99 + 5296.68 + 23500 + 5650 - 29808.71$$

$$= 11053.51$$

iv) The sum of squares between banks

$$SSB = \frac{(\sum X_1)^2}{n_1} + \frac{(\sum X_2)^2}{n_2} + \frac{(\sum X_3)^2}{n_3} + \frac{(\sum X_4)^2}{n_4} + \frac{(\sum X_5)^2}{n_5} - C.F.$$

$$= \frac{(160.66)^2}{5} + \frac{(59.05)^2}{5} + \frac{(153.55)^2}{5} + \frac{(330)^2}{5} + \frac{(160)^2}{5} - 29808.71$$

$$= 7666.52$$

v) The sum of square with in banks (SSW)

$$SSW = TSS - SSB$$

$$= 11053.51 - 7666.52$$

$$= 3386.99$$

B) One way analysis of variance (ANOVA) for Earning Per Share

Year	HBL (X_1)	LBL (X_2)	BOK (X_3)	SCBL (X_4)	NIBL (X_5)	X_1^2	X_2^2	X_3^2	X_4^2	X_5^2
2008/09	61.90	20.70	54.68	109.99	37.42	3831.61	428.49	2989.91	12097.8	1400.2
2009/10	31.80	24.12	43.08	77.65	52.55	1011.24	581.77	1855.88	6029.53	2761.5
2010/11	44.66	23.25	44.51	69.51	48.84	1994.52	540.56	1981.14	4831.64	2385.6
2011/12	39.94	21.55	37.88	72.60	27.60	1595.20	464.40	1434.89	5270.76	751.76
2012/13	34.19	24.75	36.64	65.70	46.20	1168.95	612.56	1342.49	4273.23	2134.44
Total	212.49	114.37	216.79	395.12	212.61	9601.53	2627.80	9604.31	3250.95	9443.31

Here,

$$\sum X_1 = 212.49, \sum X_2 = 114.37, \sum X_3 = 216.79, \sum X_4 = 395.12, \sum X_5 = 212.61$$

$$\sum X_1^2 = 9601.53, \sum X_2^2 = 2627.80, \sum X_3^2 = 9604.31, \sum X_4^2 = 3250.95,$$

$$\sum X_5^2 = 9443.31$$

Note:

Value of X_1, X_2, X_3, X_4 and X_5 represent the value of Dividend per share (DPS) of five commercial Banks HBL, LBL, BOK, SCBL and NIBL respectively.

i) The total sum of all observation (T)

$$\begin{aligned} T &= \sum X_1 + \sum X_2 + \sum X_3 + \sum X_4 + \sum X_5 \\ &= 212.49 + 114.37 + 216.79 + 395.12 + 212.61 \\ &= 1151.38 \end{aligned}$$

ii) The correlation factor

$$C.F. = \frac{T^2}{n} = \frac{(1151.38)^2}{5} = 53027.04$$

iii) The total sum of squares

$$\begin{aligned} TSS &= \sum X_1^2 + \sum X_2^2 + \sum X_3^2 + \sum X_4^2 + \sum X_5^2 - C.F. \\ &= 9601.53 + 2627.80 + 9604.31 + 32502.95 + 9443.31 - 53027.04 \\ &= 10752.86 \end{aligned}$$

iv) The sum of squares between banks

$$\begin{aligned} SSB &= \frac{(\sum X_1)^2}{n_1} + \frac{(\sum X_2)^2}{n_2} + \frac{(\sum X_3)^2}{n_3} + \frac{(\sum X_4)^2}{n_4} + \frac{(\sum X_5)^2}{n_5} - C.F. \\ &= \frac{(212.49)^2}{5} + \frac{(114.37)^2}{5} + \frac{(216.79)^2}{5} + \frac{(395.12)^2}{5} + \frac{(212.69)^2}{5} - 53027.04 \\ &= 8283.61 \end{aligned}$$

v) The sum of square with in banks (SSW)

$$\begin{aligned} SSW &= TSS - SSB \\ &= 10752.86 - 8283.61 \\ &= 2469.25 \end{aligned}$$

C) ne way analysis of variance (ANOVA) for Dividend Payout Ratio

Year	HBL	LBL	BOK	SCBL	NIBL	X_1^2	X_2^2	X_3^2	X_4^2	X_5^2
	(X_1)	(X_2)	(X_3)	(X_4)	(X_5)					
2008/0 9	70.37	25.41	87.31	90.92	53.45	4951.9 4	645.67	7623. 04	8266.4 5	2856. 9

2009/1 0	115.8 5	53.90	69.64	90.15	47.57	13421. 22	2905.2 1	4849. 73	8127.0 2	2262. 9
2010/1 1	82.49	67.91	78.07	71.93	102.3 8	6804.6	4611.7 7	6049. 92	5173.9 2	10481 .66
2011/1 2	71.16	46.60	69.48	82.64	108.7	5063.7 5	2171.5 6	4827. 47	6829.3 7	11815 .69
2012/1 3	43.87	60.61	40.23	76.10	75.76	1924.5 8	3673.5 7	1618. 45	5791.2 1	5739. 58
Total	383.7 4	254.4 3	344.7 3	411.7 4	387.8 6	32166. 09	14007. 78	25013 .61	34187. 97	33156 .73

Here,

$$\sum X_1 = 383.74, \sum X_2 = 254.43, \sum X_3 = 344.73, \sum X_4 = 411.74, \sum X_5 = 387.86$$

$$\sum X_1^2 = 32166.09, \sum X_2^2 = 14007.78, \sum X_3^2 = 25013.61, \sum X_4^2 = 34187.97,$$

$$\sum X_5^2 = 33156.73$$

Note:

Value of X_1, X_2, X_3, X_4 and X_5 represent the value of Dividend per share (DPS) of five commercial Banks HBL, LBL, BOK, SCBL and NIBL respectively.

i) The total sum of all observation (T)

$$\begin{aligned} T &= \sum X_1 + \sum X_2 + \sum X_3 + \sum X_4 + \sum X_5 \\ &= 383.74 + 254.43 + 344.73 + 411.74 + 387.86 \\ &= 1782.50 \end{aligned}$$

ii) The correlation factor

$$C.F. = \frac{T^2}{n} = \frac{(1782.50)^2}{5} = 127092.25$$

iii) The total sum of squares

$$TSS = \sum X_1^2 + \sum X_2^2 + \sum X_3^2 + \sum X_4^2 + \sum X_5^2 - C.F.$$

$$=$$

$$32166.09 + 14007.78 + 25013.61 + 34187.97 + 33156.73 - 127092.25$$

$$= 11439.93$$

iv) The sum of squares between banks

$$SSB = \frac{(\sum X_1)^2}{n_1} + \frac{(\sum X_2)^2}{n_2} + \frac{(\sum X_3)^2}{n_3} + \frac{(\sum X_4)^2}{n_4} + \frac{(\sum X_5)^2}{n_5} - C.F.$$

$$= \frac{(383.74)^2}{5} + \frac{(254.43)^2}{5} + \frac{(344.73)^2}{5} + \frac{(411.74)^2}{5} + \frac{(387.86)^2}{5} - 127092.25$$

$$= 3066.75$$

v) The sum of square with in banks (SSW)

$$SSW = TSS - SSB$$

$$= 11439.93 - 3066.75$$

$$= 8373.18$$