

# **CHAPTER I** **INTRODUCTION**

## **1.1 Background**

Dividend policy is an integral part of the firm's financing decision. The dividend policy of the firm is regarded as a tool to determine the appropriate allocation of profits between dividend payments and the amount to be retained in the firm. Dividend is a portion of earning of a firm which is distributed to its shareholders. Retained earnings are the most significant internal sources of financing for the growth of the firm. When any company makes profit, there is further problem of how much should be retained in the firm. Dividend policy helps to solve this problem.

Dividend policy is an integral part of the firm's financing decision (Horne and Wachowicz, 1997). Dividend policy is a major decision of the firm under which it is determined that what percentage of the earnings is retained in the firm which is desirable for the growth of the firm. Dividend policy means distribution versus retention decision, rather than making the decision on purely ad hoc basis from period to period (Pearson, 1972). Retention of earning is desirable for the growth of the firm where as shareholders are interested to get some sort of return in the form of dividend.

In the context of Nepal, most of the public enterprises are unable to distribute dividend, as these enterprises mainly focus on minimizing their losses through utilization of capital. Although, there are only few enterprises that pay dividend. Dividend distribution trend has not only attracted the investor's but has also made the management conscious about the policy regarding the payment of dividend which has brought new hopes for productive mobilization of funds. Thus, this study aims to focus on prevailing practice and policies of Nepalese listed companies with reference to commercial Banks in Nepal regarding dividend payments.

## **1.2 Profiles of Selected Companies**

Dividend policy is one of the important decisions which play vital role in financial sector. In any firm, dividend policy is taken as major financial decision which affects the value of the firm. Any investor does not invest in stock without knowing the dividend policy of the firm. This study is mainly focused on the dividend practices of 4 sample companies which include 4 commercial banks. These commercial banks taken under study are already experienced in the practice of dividend distribution. In Nepalese context, most of the investors are investing in the stock without knowledge of company's performances. This is due to the lack of availability of research about these company's performances. In this study it is tried to find out the appropriate dividend policies of banks and their performances regarding to the dividend payment. It is believed that this study will be useful to those investors who are interested to have knowledge about the performances of the banks taken under study.

### **1. Standard Chartered Bank Ltd**

Nepal Grindlays Bank was established in 1985 as a second foreign joint-venture bank under the country act, 1964. ANZ Grindlays Bank PCL is the foreign joint venture bank partner with 50 percent equity investment. The bank name has been changed into Standard Chartered Bank Ltd., from 16<sup>th</sup> July 2001. The bank has authorized capital of Rs.1000 million, issued capital of Rs.1000 million and paid up capital of Rs.620.78million. The bank has net profit of Rs.818.92 million, earning per share of Rs.131.92 and dividend per share of Rs.80 at the end of fiscal year 2007/08.

### **2. Himalayan Bank Ltd**

Himalayan Bank Limited started its operation in 1993. Habib Bank Limited Pakistan is the joint venture bank of Himalayan Bank Limited. The bank has authorized capital of Rs.2000 million, issued capital of Rs.1013.51 million and issued capital of Rs.1013.51 million. The bank has net profit of Rs.96.84 million, earning per share of Rs.62.74 and dividend per share of Rs.25 at the end of fiscal year 2007/08.

### **3.NABIL Bank Ltd**

NABIL Bank Limited, the first joint venture commercial bank has commenced its operation on July 1984. Dubai Bank Limited was the initial foreign joint venture partner with 50% equity investment. The ownership of Dubai Bank Limited was later transfer to Emirate Bank International Limited, which is currently managing NABIL in accordance with joint venture technical service agreement between Nepalese promoters and Dubai Bank Limited. The Bank has authorized capital of Rs.1600.00 million, issued capital of Rs.689.216 million and paid up capital of Rs.689.216 million. The Bank has net profit of Rs.746.47, earning per share of Rs.108.31 and dividend per share of Rs.60 at the end of fiscal year 2007/08.

### **4. Everest Bank Ltd**

Everest Bank Limited started its operation in 1994 with a view and objectives of extending professionalized and efficient banking services to various segments of the society. Punjab National Bank is the joint venture partner of Everest Bank Limited with 20% equity in the bank. The bank has authorized capital of Rs.1000.00 million, issued capital of Rs.843.20 million and paid up capital of Rs.831.40 million. The bank has net profit of Rs.451.22, earning per share of Rs.91.82 and dividend per share of Rs.20 at the end of fiscal year 2007/08.

## **1.3 Statement of Problem**

Dividend policy determines the division of earnings between payments to stockholders and reinvestment in the firm. Retained earnings are one of the most significant sources of funds for financing corporate growth, but dividends constitute the cash flows that accrue to stockholders. There are different School of thoughts on dividend policy in the theoretical literature of finance. One school of thought holds that capital gains expected to result from earnings retention are more risky than dividend expectations. Another school of thought holds that investors are basically indifferent to returns in the form of dividends or capital gains.

Many theories and empirical findings concerning dividend policy have been evolved in the literature of finance yet; the dividend policy is still a crucial and probably a most controversial topic in finance. Dividend policy may affect such areas

like financial structure, the flow of funds, corporate liquidity, stock prices and investor's satisfaction. It is clearly an important aspect of financial management.

In the context of Nepal, there are more than 100 companies and public enterprises listed with Nepal Stock Exchange Limited. These companies are not seen so serious regarding dividend decisions since most of them do not have any consistent and clear-cut policy on dividend distribution. In connection to Nepalese public Enterprises Dr. M.K. Shrestha remarks that Dividend is still considered as the unintended strategy or the non-payable obligation at a time when HMG is not in a position to impose the public limited companies to pay minimum rate of dividend on the equity capital contributed.

Some Nepalese Acts like Nepal Company Act 2053, Commercial Bank Act 2031, and other regulating acts are still silent regarding dividend payments. Because of these reasons, different companies are adopting different dividend decision inconsistently. There is common trend that dividend is decided by company management instead of by shareholders meeting.

In Nepalese context, different companies have adopted different policies and dividends are paid in the different forms such as cash dividend and stock dividend. Nowadays stock dividends are more popular in Nepal especially in banking sector. But there is no uniformity in dividend distribution. The banks taken under study are also not distributing dividend in equal proportion. Under the prevalence of these situations, this study tries to deal with the following problems.

- What is the prevailing practice of the Nepalese listed companies regarding their dividend policies?
- Whether or not the prevailing dividend policy affects corporate liquidity and stock prices of selected companies?
- Whether there is any relationship between dividend policy & other financial indicators?
- Whether there is significant difference between DPS, EPS and DPR of the selected companies?

## **1.4 Objectives of the Study**

The basic objectives of the study is to assess the prevailing practice of the Nepalese listed companies regarding dividend and to test whether or not dividend decision is influencing factors of financial structure, the flow of funds, corporate liquidity, stock prices and investors satisfaction.

The objectives of the study are as follows:

- To assess prevailing dividend policy adopted by listed companies under study.
- To study whether or not dividend influences the liquidity position and stock prices of selective companies.
- To examine whether there is significant difference between earning per share, dividend per share, dividend payout ratio.
- To provide suggestions for the improvement of sample companies dividend policy on the basis of findings.

## **1.5 Significance of the Study**

Nowadays, people are attracted to invest in shares for the purpose of getting greater returns and maximizing their wealth position. So, the dividend policy has

become an effective way to attract new investors, retain existing investors, and to keep present investors happy and to maintain goodwill of the company. When any new company floats shares through capital market, very big congregation gathers to apply for owner's certificate. It indicates people's expectation on higher of investment in shares.

While investing in shares the investor forgoes opportunity income that he could have earned. In capital market, the return can be earned in two ways

- a) By means of dividend
- b) By capital gains i.e. increase in price

Due to the lack of enough knowledge, the people are investing hit-or-miss in shares. It is necessary to establish clear conceptions about the return that results from investing in securities. In Nepal, there are almost none of the companies adopting dividend policy. There would be many reasons behind it for which there is not enough study.

Therefore, considering all these facts the study is undertaken which will help the investors to choose a profitable firm, which will provide higher return to their investment. So, this will help them to choose the better company for investment. This research will also useful for management to point out the loopholes and suggest the remedies about the appropriate dividend policy and also for stockbrokers, financial agencies, scholars, policy makers and other interested persons.

## **1.6 Limitation of the Study**

Dividend decision is a major decision area of any business concern. In Nepal, there are few studies on this topic. So, this study aims to highlight some issues regarding dividend decision in Nepalese listed companies. There are some limitations of the study.

They are:

- This study has employed secondary data published by and collected from sample companies. The output may not be accurate one since the secondary data itself induces various limitations.
- Only four commercial Banks are taken as sample due to the lack of time.
- The study covers only a period of 5 fiscal years from 2003/04 to 2007/08.
- The problem of non availability of required data and information may limit the scope of the study.

## **1.7 Organization of the Study**

The study has been organized into five chapters:

**Chapter 1** – This chapter deals with the subject matter of the study consisting background of the study, profiles of the companies ,Statement of problem, objectives of the study , limitation of the study and organization of the study.

**Chapter 2** – This chapter deals with review of literature. It includes conceptual frame work along with review of major books, journals, research works and thesis e.t.c.

**Chapter 3** – This chapter deals with Research Methodology. It includes Methodology used to achieve the objectives of the study, sources of data, population and sample, financial and statistical tools used.

**Chapter 4** – This chapter deals with analysis and interpretation of data using financial and statistical tools and Major Findings are described in third chapter.

**Chapter 5** – This is the last chapter which deals with Summary, conclusions and recommendation of the study.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

The introductory part of this study has been presented in the first chapter. In this chapter, an attempt has been made to review the various relevant literatures in relation to support the study to receive some ideas for developing a research design.

#### **2.1 The Conceptual Framework**

The dividend decision or dividend policy of a firm is one of the major decision making areas of the financial management. The dividend policy determines the amount of earnings to be distributed to shareholders and the amount to be retained in the firm. Dividend is a portion of earning which is distributed to shareholders in return of their investment in share capital. Dividend implies to the portion of earnings that is paid to the shareholders while dividend policy refers to the guidelines that management uses in establishing portion of retained earning that is paid to the shareholders in the form of dividend. Dividend conveys pro rata distribution of earnings either in the form of direct cash or additional stock in accordance with the proportionate shareholding. Nowadays, it is mostly interpreted in terms of left-over earnings after financing all acceptable investment opportunities and these are used for the payment of dividend. In this way, dividend is just the means of distributing unused funds or paying out whatever funds left after making all attractive investment. Further more, it is stated simply as the by product of the firm's capital budgeting decision and borrowing decision.

What and how much it is desirable to pay as dividend is always a matter of dispute. Dividends are desirable from shareholders point of view as it tends to increase their current wealth where as retention of earning is desirable for the growth of the firm.

These two objectives of the dividend policy are always in conflict. So, the objective of choosing a dividend policy should be to maximize the value of the firm to its shareholders. There are different theories on the relationship between dividend and the value of the firm, this will be discussed later on this chapter.

##### **2.1.1 Types of Dividend**

Corporations need to follow different types of dividend in view of the objective and policies they implement. In Nepalese context, the type of dividend that corporations follow is partly of a matter of attitude of directors and partly a matter of shareholders preferences and partly depending to the various circumstances and financial constraints and corporate plans and policies. Before considering dividend policy at theoretical level, it is useful to explain major types of dividend.

###### **➤ Cash Dividend**

Cash dividend is the dividend which is distributed to the shareholders in cash out of the earnings. The payment of the cash dividend reduces the cash account or the reserve account of the company. So, it may create liquidity problem in company. Both total assets and the net worth of the company are reduced when cash dividend

is paid. The market price of the share drops in most cases by the amount of cash dividend distributed. So, the companies should wisely make decision regarding payment of cash dividend.

➤ Stock Dividend (Bonus shares )

If additional shares are issued to existing shareholders instead of cash dividend is known as stock dividend. Payment of stock dividend increases the number of outstanding shares of the company. Simply it is a recapitalization of the owner's equity portion, i.e. he reserves and surpluses and transfers a portion of retained earnings to the capital accounts. When there is given stock dividend. There is no change in the firm's assets or liability. It does not affect cash and earnings position of the firm. It increases share numbers held by current shareholder reducing par value of stock remains as before their equity.

➤ Scrip Dividend

Sometimes, there may be temporary shortage of cash availability in the company. In such situation, company may issue scrip or notes promising to pay dividend with maturity date or disbursement date. So, if the dividend payment made through scrip or promising notes instead of cash is known as scrip dividend. Such dividend may be interest bearing or non-interest bearing they are paid when current or past earnings are adequate to holding of cash.

➤ Bond Dividend

Another aspect of dividend payment is bond dividend. It is rare phenomenon and long term enough to fall the current liability. It is somehow similar to scrip dividend. But different between the two is in respect of date of payment. As in scrip dividend, dividend isn't paid immediately. This issue of bond dividend increases the long-term obligation of the company's current liability.

➤ Property Dividend

If payments are made in the form of property or assets rather than cash, it is called property dividend. It is distributed when assets are considered no longer essential in the operation of the business or in extra ordinary circumstances. Such assets may be products of the company itself or securities of subsidiaries owned by the company.

### 2.1.2 Stability of Dividends

Stability of dividends means regularity in paying some dividend annually, even though the amount of dividend may fluctuate from year to year and may not be related with earning. Stability of dividend payment is an attractive feature to many investors. 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 very 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 a company with a stable dividend 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.

1) Constant dividend per share

Under this policy, dividend is paid in a fixed amount per share every year, irrespective of the fluctuations in the earnings. It is easy to follow this policy when earnings are stable. So this policy is followed by most of the companies. If the earnings pattern of a company shows wide fluctuations, it is difficult to maintain such a policy. Investors who have dividend as the only one source of income prefer this policy.

2) Constant payout ratio

Constant payout ratio means paying a fixed percentage of net earning as dividend payment every year. With this policy the amount of dividend will fluctuate in direct proportion of earnings. Management generally adopts this type of policy because it is directly related to the company's ability to pay dividends. If the company generates profits dividend shall be paid otherwise not. It insures that dividends are paid when profits are earned and avoided when it incurs losses.

3) Low regular dividends plus extras

The low regular dividend per share plus extra dividend policy is a compromise between the first two. Under this policy, a sum of amount is paid regularly as dividend. It gives the companies flexibility but leaves investors some what uncertain about what their dividend income will be if a company's earnings are quite volatile, however, this policy may well be its best choice, under this policy, the small amount of dividend is fixed to reduce the possibility of ever missing a dividend payment. By paying extra dividend in periods of good profits an attempt is made to prevent investors from expecting dividend amount. This policy enables a company to pay constant amount of dividend regularly without a default and allows a great deal of flexibility.

### 2.1.3 Conflicting Theories on Dividends

Two basic schools of thoughts on dividend policy have been expressed in the theoretical literature of finance. First school holds that capital gains expected to result from earnings retention are riskier than are dividend expectations. Myron Gordon and John Lintner are Theorists of this school of thought. These theorists suggest that

earnings of a firm with a low payout ratio are typically capitalized at higher rates than the earnings of a high payout firm.

The other school, associated with Metron Miller and Franco Modigliani holds that investors are basically indifferent to returns in the form of dividend or capital gains. When firms raise or lower their dividends, if their stock prices tend to rise or fall in like manner. They assert that, given the investment decision of the firm the value of the firm is determined safely by the earning power of the firm's assets and the manner in which the earnings split between dividends and retained earnings does not affect the value of firm.

#### 2.1.4 The Residual theory of Dividends

The residual theory of dividend suggest that dividend paid by a firm should be viewed as a residual amount or left after all acceptable investment opportunities have been under taken. This theory states the profit should be used first in all profitable investment plans, which reflect equal or higher rate of return than investor's opportunity rate of return. If the firm has earnings left after financing all acceptable investment opportunities, these earnings would then be distributed to shareholders in the form of dividend. If not, there would be no dividends. When we treat dividend policy as strictly as financing decision, the payment of cash dividend is a passive residual.

Residual dividend policy can be classified in three approaches:

1) pure-residual dividend policy:

The firms following this type of dividend policy will set the dividends to be paid only from the left over of the earnings retained after deductions of the investments. This policy yields volatile dividends. This policy is mostly practices by Nepalese corporations.

2) fixed dividend payment policy:

Under this approach, the firm pays fixed percentage of earnings as dividend.

3) smoothed residual dividend policy:

The dividend is set constant rupees values over years under this approach so that over the long run they will be equal to earnings minus equity investment. This policy provides the benefit of stable dividend policy and minimizes the dependence on external financing.

#### 2.1.5 Factors Influencing Dividend Policy

While making dividend decision, there are many factors that have to be considered. Some factors that influence the dividend policy are explained below.

##### 1. Legal Restrictions

Legal rules are significant because they provide the framework within which the dividend policy can be formulated. Within their boundaries, financial and economic factors have a major influence on the policy. Following are some laws regarding dividend.

i. Capital Impairment Rule

This rule states that dividend should not be paid if a firm's capital has been impaired or if dividend payment will cause capital to become impaired. It means dividends should not be paid out of paid up capital.

ii. The surplus Rule

Dividends should be paid only out of surplus. If there is no surplus or profits, dividends cannot be legally declared.

iii. The Insolvency Rule

According to insolvency rule, dividends cannot be paid if company is insolvent or if a payment would result in insolvency.

2. Stability of Earnings

A firm having relatively stable earnings is more likely to pay out a higher percentage of its earnings than is a firm with fluctuating earnings. The unstable firm is not certain of their earnings in subsequent years. So, it is likely to retain a high proportion of earnings.

3. Access to the Capital Markets

A well-established large firm with a record of profitability and stability of earnings has easy access to capital markets and other forms of external financing. However, a small, new or venturesome firm doesn't have the ability to raise equity or debt funds from capital markets is restricted. So, it must retain more earnings to finance its operation." Larger firms tend to be more mature and thus have easier access to the capital market which reduces their dependence on internally generated funding and follows for higher dividend payout ratios."

4. Liquidity Position

Profits held as retained earnings which are shown up on the right hand side of the balance sheet are generally invested in assets required for the conduct of the business. Retained earnings are not held as cash because they are already invested in plant and equipment, inventories and other assets. Therefore, even if a firm has a record of earnings, it may not be possible to pay cash dividends because of its liquidity position. Even a growing and a profitable firm needs heavy funds. In such a situation the firm may choose another option i.e. not paying dividends.

5. Profit Rate

The expected rate of return on asset determines the relative attractiveness of paying out earnings as the firm of dividend to stockholders. Thus high profits provide high dividend.

## 6. Control

Another important variable is the effect of alternative sources of financing on the control situation of the firm. Some firm follows a policy i.e. to expand only to the extent of their internal earnings. It is because raising funds by selling additional common stock dilutes the control of the dominant group in that firm. At the same time, selling debt increases the risks of fluctuating earnings to the present owners of the firm. Thus reliance on internal financing in order to maintain control reduces the dividend payout.

## 7. Contractual Restrictions

A contract made with lenders such as debt-holders, creditors and preference shareholders may restrict to pay cash dividends. Due to such restriction paying certain level of earnings or not paying more than specified sum of amount or setting aside some percentage of earnings to the investment.

## 8. Others

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, management sponsorship and control and so on.

### 2.1.6 Legal Provision Regarding Dividend Practices<sup>3</sup>

In Nepal, “The Company Act 2053”<sup>14</sup> makes some legal provision for dividend payments. These provisions may be seemed as under:

Section 2(m) states that bonus shares (stock dividends) means share issues on the form of addition shares to stockholders by capitalizing the surplus from the profits or the reserve fund of the company. The term also devotes an increase in the paid up value of the shares after capitalizing surplus or reserve.

Section 47 has provided company from purchasing its own shares. This section states that no company shall purchase its own shares and supply loans against the security of its own shares.

Section 137 bonus shares and subsection (1) states that the company must inform the office before issuing bonus shares under subsection (1); this may be done only according to a special resolution passed by the general meeting.

Section 140: Dividends and subsections of this section are as follows.  
Subsection (1): Except in the following circumstances, dividend shall be distributed among the shareholders within 45 days from the date of decision to distribute them.

In case of any law forbids the distribution of dividends.  
In case the right to dividend is disputed.

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.

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

Subsection B: Only the person whose name stands registered in the register of existing shareholders at the time of declaring the dividend shall be entitled to it.

The above indicates that Nepalese law prohibits repurchase of stock, which is against the theory of finance, the reason for this kind of provision is not known.

## 2.2 Review of Financial Journals

### 1. Gordon's Study

Myron Gordon has recommended the interesting approach relating the market value of the firm to dividend policy. He holds that investors have a strong preference for present dividends to future capital gains under the condition of uncertainty. It is assumed that current dividend is less risky than the expected capital gain. According to him, market value of a share is equal to the present value of an infinite stream of dividends to be received by the share.

Gordon's model is based on the following assumption:

- The firm is an all equity firm.
- No external financing is available, so retained earnings would be used to finance any expansion.
- Internal rate of return (  $r$  ) and cost of capital (  $k$  ) are constant.
- Discount rate,  $k$ , for the firm remains constant.
- The firm and its stream of earnings are perpetual.
- The corporate taxes do not exist.
- The retention ratio  $b$ , once decided upon is constant. Thus, growth rate  $g = b.r$  is constant.
- $K > br = g$  to get meaningful value.

Based on above assumption, the formula advanced by him is as follows.

$$P_0 = \frac{EPS (1-b)}{K_e - g}$$

Where,

$P_0$  = price of a share

EPS = earning per share

$b$  = Retention ratio

$K_e$  = Capitalization rate

$g$  = Growth rate

$1-b$  = Dividend payout ratio

Incase of growth firm's, share price tends to enhance with increase in retention ratio, b, or decrease in pay out ratio 1-b.

Incase of normal firms, share price tends to be constant regardless of changes in retention ratio b, and payout ratio 1-b.

Incase of declining firms, share price tends to enhance with increase in payout ratio, 1-b, or decrease in retention ratio, b.

## 2. Walter's Study

The arguments advanced by Professor Walter is of considerable interest in the literature of finance. He holds that the choice of dividend policies almost always affect the value of the enterprise<sup>15</sup>. The main point which he emphasized is that there is significant relationship between the internal rate of return on investment projects and market rate demanded by the investors. 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 dividend payout. This approach is based on that dividend policy can be used to maximize the wealth position of stockholders.

Basic 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, r and its cost of capital, k is constant.
- All earnings are either distributed as dividends or reinvested internally.
- There is no change in values of earning per share and dividend per share.
- The firm has a very long or infinite life.

Based on above assumption, Walter has suggested the following formula:

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

$$\text{Or } P = \frac{DPS + r/k (EPS - DPS)}{K}$$

Where ,

P = Market price per share

r = Internal rate of return

K = Cost of capital

DPS = Dividend per share

EPS = Earning per share

Walter has suggested different dividend policy for different firms based on their growth stage . They are :

## Growth Firms

Firms having  $r > k$  are referred as growth firms. Growth firms are assumed to have ample profitable investment opportunity. These firms reinvest earnings because they have higher rate of return than the rate expected by shareholders. These firms will maximize the value per share by retaining all earnings for internal investment. Thus the optimum pay out ratio for growth firm is zero. The market price per share increases as pay out ratio declines where  $r > k$ .

## Normal Firms

When the firms do not have unlimited investment opportunities with  $r > k$ . after exploiting profitable investment opportunities, these firms earn equal to the cost of capital and they have  $r = k$ . When firms are in this situation dividend policy do not have any effect on market value per share. Thus, there is no unique optimum payout ratio for the normal firms.

## Declining Firms

When the firms do not have any profitable investment opportunity to invest, these are referred as declining firms. If these firms invest on unattractive investment, they will earn less internal rate of return than required by the investors. So, investing on these investments is worthless. Thus, optimum payout ratio for declining firms is 100%. The market value per share 'P' increases as pay out ratio increases.

## Criticism of Walter's Approach

1) No External Financing – Walter's approach assumes that the investment opportunities of the firms are financed by retained earnings 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 suboptimum<sup>16</sup>.

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 to finance the gap by using other sources.

2) Constant  $r$  and  $k$  – Walter's approach is based on assumption that  $r$  and  $k$  are constant. In fact,  $r$  decreases as more investment occurs and  $k$  changes directly with the firm's risk.

### 3. Modigliani and Miller's Study

Modigliani and Miller (MM) provide 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 shareholders. 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 the split of earnings between dividends and retained earnings is of no significance in determining the value

of the firm. According to them the effect of dividend payments on shareholders wealth is exactly offset by other means of financing.

M- M Hypothesis of Irrelevance:

- Perfect capital market, rationale investors, free information, no flotation cost and infinite divisibility of security.
- Taxes do not exist.
- The firm has a fixed investment policy.
- Risks of uncertainty does not exist. Investors are able to forecast future prices and dividend with certainty and one discount rate is appropriate for all securities and all time periods. Thus,  $r = k = k_t$  for all time. Based on above assumptions.

They have advanced following formulae.

$$r = \frac{\text{Dividends} + \text{Capital gain (loss)}}{\text{Purchase price}}$$

$$r = \frac{D_1 + (P_1 - P_0)}{P_0}$$

Where ,

$r$  = rate of return

$D_1$  = Dividend per share at time  $t$

$P_1$  = Market price per share at time 1

$P_0$  = Market price per share at time 0

Or

$$P_0 = \frac{D_1 + P_1}{1 + r}$$

$$P_0 = \frac{D_1 + P_1}{1 + k} \quad (\text{Since } r = k \text{ with assumption of certainty})$$

To obtain the total value of the firm let us multiply both side by number of shares outstanding.

$$V = n P_0 = \frac{n(D_1 + P_1)}{1 + k}$$

If the firm sells  $n$  number of new shares at time 1 at a price of  $P_1$ , the value of the firm at time 0 will be

$$V = n P_0 - \frac{n(D_1 + P_1) + mp_1 - mp_1}{1 + k}$$

$$= \frac{n D_1 + n P_1 + mp_1 - mp_1}{1 + k}$$

$$= \frac{n D_1 + (n + m) P_1 - mp_1}{1 + k}$$

If the investment proposals of a firm, in a given period of time can be financed either by retained earning or the issuance of new shares or both. Thus , the amount of new issued will be

$$\begin{aligned} m P_1 &= I - (E - nD_1) \\ &= I - E + nD_1 \end{aligned}$$

Where ,

I = investment need

E = earning available

By substituting this equation in above equation, we get

$$\begin{aligned} n P_0 &= \frac{n D_1 + (n + m) P_1 - (I - E + nD_1)}{1 + k} \\ &= \frac{(n+m) P_1 - I + E}{1 + k} \end{aligned}$$

In this way, M-M show that the value of the firm is unaffected by its dividend policy. A firm which pays dividends will have to raise funds externally to finance its investment plans. M-M holds that when the firm pays dividends, its advantage is offset by external financing.

#### 4. Van Horne and Mcdonald's Study

Van Horne and Mcdonald provide a more comprehensive study on dividend policy and new equity financing<sup>19</sup>.The basic objective of the study was to highlight the combined effect of dividend policy and new equity financing decision on the market value of the firm's common stocks.

For the purpose of the study two industries viz 86 electric utility firms included on the compustat utility database and 39 firms in the electronics and their electric component industries listed on the compustat industrial data tape in 1968 were selected.

They employed two regression for electric utilities and one regression model for electronics components industry. From the study it was found that share value of electric firms in 1968 was adversely affected by new equity financing in the presence of cash dividends except for those firms in the highest new issue group and it made new equity a more costly from financing than retention of earning. They also indicated that the payment of dividend through excessive equity financing reduces share prices.

#### 5. Friend and Puckett's Study

Friend and Puckett (1964) conducted a study on the relationship between dividends and stock prices, by running regression analysis on the data of 110 firms from five industries in the year 1956 and 1958. These five industries were chemicals, electric utilities, electronics, food and steels. These industries were selected to permit

a distinction made between the results for growth and non growth industries and to provide a basis for comparison with result by other authors for earlier years. They also considered cyclical and non-cyclical industries which they covered. The study periods covered a boom year for the economy when stock prices leveled off after rise (1956) and a somewhat depressed year for the economy when stock prices, however, rose strongly (1958).

They used dividends, retained earnings and price earnings ratio as an independent variables in their regression model of price function. They used supply function, i.e. dividend function also. In their dividend function, earnings, last years dividends and price earnings ratio are independent variables. They quoted that the dividend supply function was developed by Lintner. Symbolically, their price function and dividend supply function are price function :

$$P_t = a + b D_t + c R_t + d (E/P)_{t-1}$$

Where ,

$P_t$  = per share price at time t

$D_t$  = Dividends at time t

$R_t$  = Retained earnings at time t

$(E/P)_{t-1}$  = Lagged earnings price ratio

Dividend supply function:

$$D_t = e + f E_t + g D_{t-1} + h (E/P)_{t-1}$$

Where,

$E_t$  = Earnings per share at time t

$D_{t-1}$  = Last years dividend

Assumption :

- 1) Dividend do react to year to year fluctuation in earnings .
- 2) Price doesn't contain speculative components
- 3) Earnings fluctuations may not sum zero over the sample.

There regression results based on the equation of  $P_t = a + bD_t + cR_t$  showed the customary strong dividend and relatively weak retained earnings effects in three of the five industries. i.e., chemicals, foods and steel. Again they tested other regression equations by adding lagged earnings price ratio to the above equation and resulted the following equation:  $P_t = a + bD_t + cR_t + d(E/P)_{t-1}$ . They found the following results: they found that more than 80% of the variation in stock prices can be explained by three independent variables. Dividends have a predominant influence on the stock prices in the same three out of five industries but they found the differences between the dividends and retained earnings coefficient are not quite so marked as in the first set of regressions. They also found that the dividends and the retained earnings coefficient are closer to each other for all industries in both years except for steels in 1956 and the correlation are higher again except for steels. They also calculated dividends supply equation i.e.

$D_t = e + fE_t + gD_{t-1} + h(E/P)_{t-1}$  and the dividend price equation for four industry groups in 1958. In their derived price equation it seems that there were no significant changes from those obtained from the single equation approach as explained above. They argued that the stock prices or more accurately the price earning ratio does not have a significant effect on dividend payout. On the other hand, they noted that the retained earnings effect is increased relatively in three of the four cases tested. Further, they argued that their result suggests price effect on the dividend supply are not a serious source of bias in the customary derivation of the dividend and retained earnings effects on the stock prices, though such a bias might be marked if the disturbing effect of short run income movements are sufficiently great.

Further, they lagged price as a variable instead of lagged earnings price ratio and showed that more than 90% of variation in stock prices can be explained by the three independent variables and retained earnings received greater relative weight than dividends in most of the cases. The only exception was steels and foods in 1958. They considered chemicals, electronics and utilities as growth industries, in these groups and the retained earnings effect was larger than the dividend effect for both years covered. For the other two industries, namely foods and steels. There were no significant systematic differences between the retained earnings and dividend coefficients.

Similarly, they tested the regression equation of  $P_t = a + bD_t + cR_t$  by using normalized earnings again. They obtained normalized retained earnings by subtracting dividends from normalized earnings. That normalized procedure was based on the period 1950-1961. Again they added prior year's normalized earning price variable and they compared the result.

Comparing the result they found that there was significant role of normalized earnings and retained earnings but effects of normalized price earning ratio was constant. When they examined the later equation, they found that the difference between dividend and retained earnings coefficients disappeared.

Finally they concluded that management might be able to increase prices somewhat by raising dividends in foods and steel industries. They conducted more detailed examination of the chemical samples. That examination disclosed that the result obtained largely reflected the undue regression weighting given the three firms with price deviating most from the average price in the sample of 20 firms and retained earnings as a price determinant.

Finally, Friend and Puckett concluded that, it is possible that management might be able, at least in some measure, to increase stock prices in the non growth industries by raising dividends and in growth industries by greater retention, i.e., low dividends

## 6. Deepak Chawla and G. Srinivasan's Study

Chawala and Srinivasan conducted a study on the impact of dividend and retention on share prices. 18 chemical and 13 sugar industries were selected for study. The basic objectives of the study were:

- To set a model to explain share price dividend and retained earnings relationship.
- To test the dividend, retained earnings hypothesis.
- To examine the structural changes in estimated relations overtime.

Simultaneous equation model as developed by Friend and Puckett in 1964 was employed.

1) Price Function

$$P_t = F [ D_t , R_t P/E_{(t-1)} ]$$

2) Dividend Supply Function

$$D_t = F [ E_t , D_{(t-1)} , P/E_{(t-1)} ]$$

Where ,

P = Market Price Per Share

D = Dividend Per Share

R = Retained Earnings Per Share

E = Earning Per Share

P/E = Deviation From Sample, Average of Price Earning Ratio

t = Subscript for Time

They used two stage least square technique for estimation and in case of chemical industry they found the estimated coefficient had the correct sign and coefficient of determination of all the equations were very high.

It implies that the stock price and dividend supply variation can be explained by their independent variables. But in case of sugar industry they found that the sign for retained earning is negative. Finally, they concluded that dividend hypothesis holds good in the chemical industry. Both dividend and retained earnings significantly explain the variation in share price in chemical industry.

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

H.K.Baker, Gail E. Farrelly and Richard B. Edelman surveyed management view on dividend policy.<sup>23</sup> They asked corporate financial managers what they considered most important in determining their firm's dividend policy.

The objectives of their survey were as follows.

- 1) To compare the determinants of dividend policy today with Linter's behavioral model of corporate dividend policy and to assess management's agreement with Linter's findings.
- 2) To examine management's perception of signaling and clientele effect
- 3) 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 Yorks 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 Whole sale/retail(103).

They mailed questionnaire to obtain information about corporate dividend policy. The questionnaire consisted three parts (i) 15 closed end statements about the importance of Various factors that each firm used in determining its dividend policy, (ii) 18 closed end statement about theoretical issues involving corporate dividend policy and (iii) a respondent's profile including such items as the firm's dividends and earning per share.

They send the final survey instrument to the chief financial officer of the 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 (56.6% response rate), which were divided among the three industry groups as follows: 114 utilities (76%), 147 manufacturing firms (47.6%) and 57 wholesale/retail (5.3%).

Based on dividend and earning per share data provided by the respondents, the average dividend payout ratio were computed.

They found that payout ratio of the responding utilities(70.3%) was considerably higher than for the manufacturing (36.6%) and wholesale/retail (36.1%).

## **2.3 Review of Research works in Nepalese Perspective**

### **1. Shrestha's Study**

Dr. Manohar Krishna Shrestha has conducted a study to deal with policies and financial performance of some companies in Nepal.<sup>24</sup> A book entitled "Shareholder's Democracy and Annual General Meeting Feedback" contains a paper, presented by Dr. Shrestha, on the occasion of fifth Annual Meeting of Nepal Arab Bank. On this paper, Shrestha has raised the following issues:

- The cost push inflation at exorbitant rate has made the shareholders to expect higher returns from their investment.
- Multiple decrease in the purchasing power of the Nepalese Currency to the extent that higher return by way of dividend is just a natural economic consequence of it.
- Erosion in the purchasing power of people has made it clear that dividend payment must be directed to enhance shareholder's purchasing power by raising dividend payout ratio on the basis of both earning and cost theory.
- Indo- Nepal trade transit deadlock has become a sort of economic warfare putting rise in the cost of living index to a considerable extent. This has caused the shareholders to expect higher dividend.
- The waiting of five years with peanut dividend in previous year is equally a strong enforceable reason of the bank's shareholders to expect handsome dividend already assured and committed in various reports of earlier Annual General Meeting.

- One way to encourage risk – taking and preference is to have proper risk – return trade off by Bank Management in a way that higher return must be the investment rule for higher risk takers that compromise bank's share holders.

In the prevalence of these conditions, Shrestha suggests bank management to rethink the matters related to payment of dividend

## 2. Kamal Das Manadhar's Study

K.D. Manadhar has carried out latest study on the topic of "Bonus share and dividend changes empirical analysis in Nepalese context" based on the data collected for the period of 11 years from 1987/88 to 1997/98. The analysis covers 35 observations pre bonus dividend rate and 29 observation of post bonus dividend rate of 12 samples of the Nepalese corporate firms selected from the listed corporate firms in NEPSE. The sample corporate firms include 5 from banking, 3 from insurance and finance company and 4 from manufacturing, Trading and Airlines.

The study is made to analyze the actual dividends behavior of Nepalese corporate firms after an issue of bonus share. Moreover, there are some specific research questions.

- Is quantum of the dividends increases directly related to ratio of bonus issue?
- Is there any association between existing dividend rate and bonus issue?
- Does the dividend announcement of the management indicate its intention of increasing future dividend?

Major findings of this study are as follows

The announcement of bonus share issue has a significant impact in market price of share which ultimately the wealth of the stockholders.

- In overall, corporate management have not found considering its effect on dividend distribution in future as reflected by absence of the systematic dividend paying practice before and after bonus share issue.
- There is no systematic policy of dividend distribution after the issue.
- There is diversity in the increase in dividend rate and the total dividend payment after bonus issue. It means dividend increase doesn't follow the bonus share issue in Nepalese corporate firm's dividend behavior.
- The relationship between existing dividend and various ranges of bonus share issue ratio is not found significant in Nepalese corporate firms.

## 3. Pradhan's Study

Radhe Shyam Pradhan conducted a comprehensive study on stock market behavior in a small capital market<sup>25</sup>. The study was based on pooled cross sectional data of 17 enterprises whose stocks are listed in stock exchange centre and traded in the stock market. The results revealed by the study are as follows.

- Stocks with larger Market Value to Book Value have larger P/E ratios and lower dividends. Price – earning ratios are more variable for stock with larger MV to BV ratios and dividend ratios are more variable for stocks with smaller MV to BV.
- Stock with larger MV to BV ratios have lower liquidity, higher leverage, lower earnings, lower turnover and lower interest coverage. However, liquidity and leverage are more variable for stocks with larger MV to BV ratios while earnings, assets turnover and interest coverage are more variable for stocks with smaller MV to BV.
- Stock with larger P/E ratio have larger MV to BV of equity and smaller dividend ratios. But these ratios of MV to BV and dividends are more variable for smaller stocks than for larger stocks.
- Stocks with larger P/E ratio have lower liquidity, higher leverage, lower profitability, lower asset turnover and lower interest coverage. However, liquidity, leverage, earnings, turnover and interest coverages are more variable for stocks with smaller P/E ratios.
- Stocks paying higher dividends have higher liquidity, lower leverage, higher earnings, higher turnover and higher coverages. However, liquidity and leverage ratios are more variable for stocks paying lower dividends while earnings, assets turnover and interest coverage are more variable for the stocks paying higher dividends.

## 2.4 Review of Previous Thesis

### Adhikari's Study

Nabha Raj Adhikari carried out a research on " Corporate Dividend Practices in Nepal " using primary as well as secondary data.

Main Objectives of his research are as follows;

- To analyze the properties of portfolios formed on dividend
- To examine the relationship between dividend and stock prices.
- To survey the opinions of financial executives on corporate dividend practices.

Major findings of his research are as follows:

- Differences in financial position between high dividend paying and low dividend paying companies.
- Financial position of high dividend paying companies are comparatively better than that of low dividend paying companies.
- Market price of stock of both finance and non- finance sectors are affected by dividends.
- There is a positive relationship between dividend and stock price.
- There is a negative relationship between dividend payout and earnings before tax to net worth.

- Stocks with larger ratio of DPS to book value per share have higher profitability. These profitability ratios of stocks paying larger dividends are also more variable as compared to stocks paying smaller dividends.
- Companies paying higher dividend are reluctant to employ higher degree of leverage in their capital structures.
- The stocks with larger ratio of dividend per share to book value per share have also higher turnover ratio and higher interest coverage.

Some findings through primary data:

- With respect to factors affecting corporate dividend policy, the majority of the respondents give the first priority to "earning", the second to availability of cash the third to past dividend and fourth to concern about maintaining or increasing stock price.
- Dividend payout affects the price of the common stock.
- As regards dividend as a residual decision, the majority of the respondents feel that it is not a real residual decision.
- With respect to major motives for paying cash dividend, the majority of the respondents feel that it is to convey information to shareholders that the company is doing good.
- Nepalese shareholders are not really indifferent towards payout or non payment of dividend.
- One of the major finding is that earning announcement helps to increase the market price of the share.

#### Sadaker Timilsina's Study

Mr. Sadaker Timilsina had conducted the study on "Dividend and stock prices : an Empirical study" of 16 enterprises.

The main objectives of the study are as follows.

- To test the relationship between DPS and stock prices.
- To determine the impact of dividend policy on stock prices.
- To identify whether it is possible to increase the market value of the stock changing dividend policy or payout ratio.

The findings of his study are as follows

- The relationship between DPS and Stock prices is positive in the sample companies.
- DPS affects the share prices variably in different sectors.
- Changing the dividend policy or dividend per share might help to increase the market price of share.
- The relationship between stock prices and retained earnings per share is not prominent.
- The relationship between stock prices and lagged earnings price ratio is negative.

### Katawal's Study

Yagya Bahadur Katawal has conducted a thesis on " A Comparative Study of Dividend Policy in Commercial Banks" in July 2001 based on data collected from 1994/95 to 1998/99 for 6 sample commercial banks.

The main objectives of his study are as follows:

- To study the current practice of dividend policy in commercial banks.
- To find out the impact of dividend on share prices.
- To analyze the relationship of financial indicators.
- To examine if there is any uniformity among DPS, EPS and DPR on the six sample banks.

The major findings of his study are as follows:

- Average EPS and DPS for the period covered by the study of all concerned banks are satisfactory.
- Analysis of coefficient of variation indicates that there is largest fluctuation in EPS and DPS and other are relatively more consistent.
- The analysis of DPR shows that none of the sample banks have consistent dividend policy.
- The market value of shares in the market is fluctuating in all sample banks.
- The most important decision is that no specific dividend payment strategy is following by these banks. Payment of cash dividend and stock dividend are made without wise managerial decision due to unstable and adequate dividend and unequal payout ratio.

### Sharma's Study

Minarba Sharma has conducted the study on "Dividend Policy with respect to Insurance companies in Nepal" from 1994/95 to 1998/99 with four Insurance Companies in Nepal.

The main objectives of her study was:

- To identify the existing practice of dividend policy in Insurance companies.
- To find out the impact of dividend per share and market price of stock.
- To examine whether there is significant difference or not among DPS, EPS and DPR of the selected companies.
- To know if there is any relationship between Market value per share and Dividend policy and other financial indicator such as DPS, EPS, DPR, PE Ratio, Liquidity ratio.
- To provide workable suggestion that may be helpful to the formulation of the optimum dividend policy and maximize the stock price.

Major Findings are as follows:

- The average DPS and EPS Of NLGICO NICO is satisfactory compared to PICO & UICO. Since, later Insurance companies are new in dividend distribution.
- The analysis of Coefficient of variation indicates largest fluctuation in PICO & UICO.

- The analysis of DPR shows that NLGICO, PICO and UICO have followed moderate dividend policy whereas NICO followed aggressive dividend policy.
- The dividend yield analysis is fluctuating in all sample Insurance companies.

#### Bhattacharai's Study

Bishnu Hari Bhattacharai in his thesis paper "Dividend Decision and Its Impact on stock Valuation" concludes that

- There is positive relationship between cash flow and current profit and dividend percentage of shares. The degree of relationship is almost perfect. None worthy point in Nepalese companies is cash balance is maintained only when there is profit to pay dividend though where there if both balance of cash and enough net profit only when the dividend is declared.
- There is no criterion to adopt payout ratio and it is observed that there is a negative relationship between payout ratio and valuation of shares.
- In aggregate, there is no stable dividend paid by the companies over the years. Some companies have steadily increased dividend. It can be inferred that they have adopted low regular plus extra dividend. Stable dividend influence considerable impact on valuation of shares if there are rational investors. However, Nepalese company Management yet to realize this.
- Inflation rate in recent year are decreasing and the market price of shares are increasing. Nevertheless, the companies are not able to give required rate of returns to the investors.
- There was negative relationship between market price of share and stockholders required rate of return. Shareholders have foregone opportunity income in hope of getting higher return, but companies have not been able to return even equal to risk free rate of return.

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Research Methodology is the methods, steps, guidelines which are to be followed in analysis and it is the way of presenting collected data with meaningful analysis. According to C.R. Kothari Research Methodology refers to the various sequential steps (along with a rationale, of each step) to be adopted by a researcher in studying a problem with certain object/ objects in view<sup>34</sup>. So, in this study research methodology has been paid due attention to achieve the objectives of the study.

#### **3.2 Research Design**

Research design is a plan, structure and strategy to obtain the objectives of the study. The research design of this study will be descriptive as well as analytical using the variables related with the dividend policy. The annual reports, Financial statements and other relevant materials of the companies will be studied. This research is based on secondary data. It covers the data from the year 1996/97 to 2000/01. The collected data is analyzed with financial as well as statistical tools and interpreted.

#### **3.3 Population and Sample**

This study is based on the data of the companies listed in NEPSE. So, the population is taken from only those companies which are listed in NEPSE. Since, the topic implies the study should be done among the dividend paying practices and actively traded companies, the sampling will be done accordingly. Out of the 163 companies listed with Nepal Stock Exchange Ltd, only 4 companies are selected under this study.

The selected four companies taken under this study are from banking sector. This study covers 4 commercial banks whose shares are actively traded in NEPSE.

The selection is not based on a particular opinion or knowledge, but rather judgmental sampling. There are altogether 23 commercial banks registered under Nepal Rastra Bank. There are 23 banks listed in NEPSE.

The selected samples are as follows.

- 1) Standard Chartered Bank Nepal Limited
- 2) Himalayan Bank Limited
- 3) NABIL Bank Limited
- 4) Everest Bank Limited

### **3.4 Source of Data**

The study is basically based on secondary data. All the data required for the research is collected from the secondary source, mainly from the financial statement of the listed companies and trading report published by NEPSE. The other supplementary data and information have been obtained from the annual reports published by the concerned Banks to their shareholders. The data of different financial variables related with dividend is collected from:

- Annual Reports
- Publications of the concerned companies
- Nepal Stock Exchange Ltd.
- Newspapers and Magazines
- Security Board of Nepal
- Publication of Finance Ministry
- Central Library T.U., Shanker Dev Campus Library

### **3.5 Method of Analysis / Analysis Technique**

The study employs various financial and statistical tools to analyze the data collected from various sources. The analysis is grouped in 4 parts.

- General Analysis
- Correlation Analysis
- Simple Regression and Multiple Regression Analysis
- Test of Hypothesis

#### General Analysis

- 1) Dividend Per Share Analysis
- 2) Earning Per Share Analysis
- 3) Dividend Yield Analysis
- 4) Earning Yield Analysis
- 5) Dividend Payout Ratio Analysis
- 6) Price Earning Ratio Analysis
- 7) Market Price Per Share Analysis

#### Correlation Analysis

Correlation Analysis tells us whether variables under study move in the same direction or in reverse direction. Correlation co-efficient between following financial variables has been calculated and analyzed.

#### Simple Correlation Analysis

- 1) Between DPS and EPS
- 2) Between EPS and MPS
- 3) Between DPR and MPS
- 4) Between DPS and MPS
- 5) Between DY and MPS.

#### Regression Analysis

##### Simple Regression Analysis

- 1) Regression Analysis of DPS on EPS
- 2) Regression Analysis of MPS on DPS
- 3) Regression Analysis of MPS on EPS

- 4) Regression Analysis of MPS on DY
- 5) Regression Analysis of MPS on DPR

#### Multiple Regression Analysis

- 1) Multiple Regression of MPS on EPS, DPS and DPR

#### **Financial tools:**

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

- 1) Dividend Per Share (DPS)

Dividend per share indicates the rupee earning actually distributed to common stockholders on per share basis. It measures the dividend distribution to each equity.

The DPS simply shows the portion of earning distribution to the shareholders on per share basis. Generally, the higher DPS creates positive attitude of the shareholders toward the bank, which consequently helps to increase the market value of the shares. And it also works as the indicator of better performance of the bank management. It is defined as the result received by dividing the total dividend distributed to equity shareholders by the total number of equity share outstanding. Thus,

$$\text{DPS} = \frac{\text{Net profit that is distributed as dividend (or total dividend)}}{\text{No. of common shares outstanding}}$$

- 2) Earning per share (EPS)

Earning per share refers the rupee amount earned per share of common stock outstanding. It measures the return of each equity shareholders. Its calculation will be helpful whether the company's earning power on per share basis have changed over the period or not. It is also identified to measure the profitableness of the shareholders investment. The earning per share simply shows the profitability of the banks on a per share basis. The higher earning indicates the funds and vice versa. In other words, higher earning per share denotes the strength and lower earning per share indicates the

weakness of the banks. EPS is defined as the result received by dividing the earning available to common shareholders by the total number of common stock outstanding. Thus,

$$\text{EPS} = \frac{\text{Earning available to common shareholders}}{\text{No. of common stock outstanding}}$$

### 3) Dividend Yield (DY)

Dividend yield is a percentage of dividends per share on market price per share. It shows that how much is the dividend per share on market price per share. It measures the dividend in relation to market value of share. So, dividend yield is the dividend received by the investors as a percentage of market prices per share in the stock market.

This ratio highly influences the market price per share because a small change in dividend per share can bring effective change in the market value of the share. The share with higher dividend yields is worth buying. Dividend has important guidance to commit funds for the buying of shares in the secondary market. Dividend yield reflects percentage relationship between dividend per share and market value per share. It is calculated by dividing the cash dividends per share by the market value per share. Thus,

$$\text{Dividend yield} = \frac{\text{Dividend per share}}{\text{Market value per share}}$$

### 4) Earning yield (EY)

The earning yield may be defined as the ratio of earnings per share to the market value per ordinary share. Thus,

$$\text{Earning yield} = \frac{\text{Earning per share}}{\text{Market value per share}}$$

### 5) Dividend payout ratio (DPR)

Dividend payout ratio is calculated to indicate the percentage of the profit that is distributed as dividend and the percentage of profit retained as reserve and surplus for the growth of the company. It is the portion of the earning used for the payment of

dividend. The dividend payout ratio is the earning paid to the equity holders from the earning of a firm in a particular year. In other words, the amount of dividend that a bank pays depends upon the earning capacity of the bank. Higher earning enhances the ability to pay more dividends and vice versa.

There is a reciprocal relationship between dividends and retained earnings. The higher the dividend payout ratio, the lower will be the portion of retained earning and vice versa. The capacity of internal financing of the firm is checked by the retention ratio. It is calculated to indicate the percentage of the profit that is distributed as dividend. This ratio is calculated by dividing dividend per share by the earning per share. Thus,

$$\text{Dividend Payout ratio} = \frac{\text{Dividend per share (DPS)}}{\text{Earning per share (EPS)}}$$

#### 6) Price earning ratio (P/E ratio)

Price earning ratio reflects the price currently paid by the market for each rupee of currently reported earning per share. It is calculated by dividing the market price per share (MPS) by earning per share (EPS). Thus,

#### 7) Market Price Per Share (MPS)

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

$$\text{P/E Ratio} = \frac{\text{Market price per share (MPS)}}{\text{Earning per share (EPS)}}$$

## Statistical tools :

The research holds various statistical tools which are defined as follows.

### 1) Mean ( $\bar{X}$ )

The arithmetic mean or average is the sum of total values to the number of observations in the sample. It represents the entire data which lies almost between the two extremes. For this reason an average is frequently referred to as measure of central tendency. In this study it is used in data related to dividend of sample companies over different years. It is calculated as:

$$\text{Mean } (\bar{X}) = \frac{\text{sum of total values}}{\text{No. of values}}$$

$$\text{Or, } \bar{X} = \frac{\sum X}{N}$$

Where,

$$\sum X = \text{sum of total values}$$

N = number of items

### 2) Standard Deviation (S.D.)

The measurement of the scatter ness of the mass of figures in a series about an average is known as dispersion. The standard deviation is an absolute measurement of dispersion in which the drawbacks present in other measures of dispersion are removed. The high amount of dispersion reflects high standard deviation. The small standard deviation means the high degree of homogeneity of the observations. It is calculated for selected dependent and independent variables specified. It is the positive square root of mean squared deviation from the arithmetic mean. Generally, it is denoted by small Greek letter  $\sigma$  (read as sigma) and is obtained as follows:

$$\text{Standard Deviation ( )} = \frac{\sum (x - \bar{x})^2}{N}$$

Where,

X = Variable

$\bar{X}$  = Mean

N = number of items in the series

### 3) Coefficient of variations (C.V)

The coefficient of variations reflect the relation between standard deviation and mean. The relative measure of dispersion based on the standard deviation is known as coefficient of standard deviation. The coefficient of dispersion based on standard deviation multiplied by 100 is known as the C.V. It is used for comparing variability of two distributions. Lower value of coefficient of variation is preferable since it denotes the lower degree of dispersion.

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

$$\text{Or, C.V.} = \frac{\text{S.D.} \times 100}{\bar{X}}$$

Where,

S.D. = Standard Deviation

$\bar{X}$  = Mean

### 4) Probable Error (P.E)

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

$$P.E. = 0.6745 \frac{1-r^2}{\sqrt{\quad}}$$

Where,

r = coefficient of correlation

N = number of years

- (1) If  $r < P.E.$ , it is insignificant. So perhaps there is no evidence of correlation.
- (2) If  $r > 6 P.E.$ , it is significant. The P.E. of correlation coefficients may be used to determine the limits within which the population correlation lies. Limits for population correlation coefficient are  $r \pm P.E.$

#### 5) Coefficient of correlation (r)

Correlation analysis is the statistical tool that can be used to describe the degree to which one variable is linearly related to another. The coefficient of correlation measures the direction of relationship between two sets of figure. It is the square root of the coefficient of determination. Correlation can either be positive or it can be negative. If both variables are changing in the same direction, then correlation is said to be positive but when the variations in the two variables take place in the opposite direction the correlation is termed as negative. In this study, coefficient of correlation is calculated between stock prices and dividends, stock prices and retained earnings.

$$r = \frac{\text{Cov}(x, y)}{\sqrt{\quad}}$$

$$\text{Or, } r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\quad}}$$

$$\text{Or, } (r) = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Where,

Are the standard deviation of the distributions of X and Y values respectively.

COV(X, Y) = Covariance of X, Y Value

$$= \frac{\sum (x - \bar{x})(y - \bar{y})}{(n - 1)}$$

#### 6) Coefficient of Determination ( $R^2$ )

The coefficient of determination is a measure of the degree of linear association or correlation between two variables, one of which happens to be independent and being dependent variable.

Coefficient of determination measures the percentage total variation in dependent variable explained by independent variable. Coefficient of determination can have value ranging from zero to one. If coefficient of determination is equal to 0.85 which indicates that the independent variables used in regression model explain 85% of the total variation in the dependent variable. A value of one can occur only if the unexplained variation is zero which simply means that all the data points in the scatter diagram fall exactly on the regression line.

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

$$\text{Or, } R^2 = 1 - \frac{\text{Unexplained variance}}{\text{Total Variance}}$$

#### 7) Regression Analysis

Regression analysis is concerned with the study of the relationship between one variable called the explained or dependent and one or more other variables called

independent variables or explanatory. Regression refers to an analysis which is involving the fitting of an equation to set of data points, generally by the method of least square. In other words the regression is a statistical method for investigating relationships between the variables by the establishment of an approximate functional relationships between them .It is considered as a useful tool for determining the strength of relationship between two (Simple regression) or more (Multiple regression) variables. It helps to predict or estimate the value of one variable when the value of other variable is known. The analysis, which is used to explain the average relationship between two variables, is known as simple linear regression analysis. In this study, the following simple regression has been analyzed.

Dividend per Share on Earning per Share

$$Y = a + bX$$

Where,

Y = Dividend per share

a= Regression Constant

b= Regression Coefficient

X= Earning per Share

This model has been constructed to examine the relationship between Dividend per Share (Dependent variable) and Earning per Share (Independent variable).

Market Price per Share on Earning per Share

$$Y = a + bX$$

Where,

Y = Market Price per share

a= Regression Constant

b= Regression Coefficient

X= Earning per Share

This model has been constructed to examine the relationship between Market Price per Share (Dependent variable) and Earning per Share (Independent variable).

Market Price per Share on Dividend per Share

$$Y = a + bX$$

Where,

Y = Market Price per share

a = Regression Constant

b = Regression Coefficient

X = Dividend per Share

This model has been constructed to examine the relationship between Market Price per Share (Dependent variable) and Dividend per Share (Independent variable).

Market Price per Share on Dividend Payout Ratio

$$Y = a + bX$$

Where,

Y = Market Price per share

a = Regression Constant

b = Regression Coefficient

X = Dividend Payout ratio

This model has been constructed to examine the relationship between Market Price per Share (Dependent variable) and Dividend Payout ratio (Independent variable).

Market Price per Share on Dividend yield

$$Y = a + bX$$

Where,

Y = Market Price per share

a = Regression Constant

b = Regression Coefficient

X = Dividend yield

This model has been constructed to examine the relationship between Market Price per Share (Dependent variable) and Dividend yield (Independent variable).

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

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

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

Where,

Y = Market Price per share

a= Regression Constant

b= Regression Coefficient

X= Dividend yield

n = Number of observations in the sample

In the same way following multiple regressions are analyzed:

Regression Equation no.1

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

Where,

X<sub>1</sub> = Market Price Per Share (dependent variable)

X<sub>2</sub> = Earning Per Share (independent variable)

X<sub>3</sub> = Dividend Per Share (independent variable)

a<sub>1</sub> = Regression Constant

b<sub>1</sub> and b<sub>2</sub> = Coefficient of Net Regression

Regression Equation no.2

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

Where,

X<sub>1</sub> = Market Price Per Share (dependent variable)

X<sub>2</sub> = Dividend Payout Ratio (independent variable)

X<sub>3</sub> = Dividend Per Share (independent variable)

a<sub>1</sub> = Regression Constant

b<sub>1</sub> and b<sub>2</sub> = Coefficient of Net Regression

I. Regression Constant (a)

The value of the constant which is the intercept of the model indicates the average level of dependent variable when independent variable is zero. In other words, it is better to understand that 'a' (constant) indicates the mean or average effect on dependent variable if all the variables omitted from the model.

## II. Regression coefficients ( $b_1, b_2, b_3$ )

The regression coefficient of each independent variable indicates the marginal relationship between independent variable and value of dependent variable, holding constant the effect of all other independent variables in the regression model. It describes how changes in independent variables affect the values of dependent variables estimate.

### 8) Standard Error of Estimate (S.E.E)

With the help of regression equation perfect prediction is practically impossible. Standard error of estimate is a measure of reliability of the estimating equation, indicating the variability of the observed points around the regression line, that is, the extent to which observed values differs from their predicted values on the regression line. The smaller the values of standard error of estimate, the closer will be the dots to the regression line and the better estimates based on the equation for this line. If standard error of estimate is zero, then there is no variation about the line and the correlation will be perfect. Thus, with the help of standard error of estimate, it is possible for us to ascertain how good and representative the regression line is as a description of the average relationship between two series.

### 9) F – test

To test the validity of our assumption, we can also use F-test. The differences between two samples means can be studied through t – test whereas to examine the significance of the differences between more than two sample means at one and at the same time, F-test is used.

F-test, i.e. the technique of analysis of variance enables us to test or for the significance of the differences between more than two sample means. Using this

technique, one will be able to make inferences about whether his regression equation provides statistically significant result or not.

#### 10) T – Statistics

To test the validity of our assumption, 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 first and compared with the table value of 't' at a certain level of significance for given degree of freedom. If the calculated value of 't' exceeds the table value (say  $t_{0.05}$ ) we infer that the difference is significant at 5% level but if 't' value is less than the concerning table value of 't' the difference is not significant.

#### **Hypothesis of the study**

Hypothesis means the presumption or quantitative statement of the population parameter which may be true or false. In order to make proper decision about the quantitative statement of the population, testing of hypothesis technique is used. Note that the testing of hypothesis is carried out by using sample information.

#### Steps in testing of Hypothesis

Testing of hypothesis includes the following systematic steps in order to make precise decision about the value which has to be tested.

#### Null hypothesis

In the decision making procedure, first of all the Null hypothesis is stated which is denoted by  $H_0$ . The null hypothesis means hypothesis of no difference. It is usually set for the express purpose of being rejected.

Null hypothesis is set as:

**$H_0$ :** The successive or lagged price changes are independent.

#### Alternative Hypothesis

The researchers also have to specify a hypothesis that will be accepted if null hypothesis is rejected. Such hypothesis is called alternative hypothesis. It should be noted that alternative hypothesis is a mutually exclusive and complementary statement of null hypothesis. Alternative hypothesis will be accepted if the null hypothesis is rejected.

Alternative hypothesis is set as:

**H<sub>1</sub>**: The successive or lagged price changes are dependent.

### Test of Hypothesis

A hypothesis is a conjectural statement of the relationship between two or more variables. The test of hypothesis discloses the fact whether the difference between the computed statistic and hypothetical parameter is significant or not. It also prefers clear implications for testing the stated relations. The research on this thesis topic strongly holds that the hypothesis criteria. The hypothesis tests of this research work are as follows.

#### First Hypothesis

Null Hypothesis (H<sub>0</sub>):  $\mu_1 = \mu_2 = \mu_3 = \mu_4$

i.e. There is no significant difference in DPS of SCB,HBL,NABIL and EBL.

Alternative Hypothesis (H<sub>1</sub>):  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$

i.e. There is significant difference in DPS of SCB,HBL,NABIL and EBL.

#### Second Hypothesis

Null Hypothesis (H<sub>0</sub>):  $\mu_1 = \mu_2 = \mu_3 = \mu_4$

i.e. There is no significant difference in EPS of SCB,HBL,NABIL and EBL.

Alternative Hypothesis (H<sub>1</sub>):  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$

i.e. There is significant difference in EPS of SCB,HBL,NABIL and EBL.

#### Third Hypothesis

Null Hypothesis (H<sub>0</sub>):  $\mu_1 = \mu_2 = \mu_3 = \mu_4$

i.e. There is no significant difference in DPR of SCB,HBL,NABIL and EBL.

Alternative Hypothesis (H<sub>1</sub>):  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$

i.e. There is significant difference in DPR of SCB,HBL,NABIL and EBL.

## CHAPTER IV PRESENTATION AND ANALYSIS OF DATA

The chapter consists presentation and analysis of data related with different variables using the financial and statistical tools explained in previous chapter (Research Methodology). This chapter is the focal part of the study.

### 4.1 ANALYSIS OF FINANCIAL INDICATORS AND VARIABLES

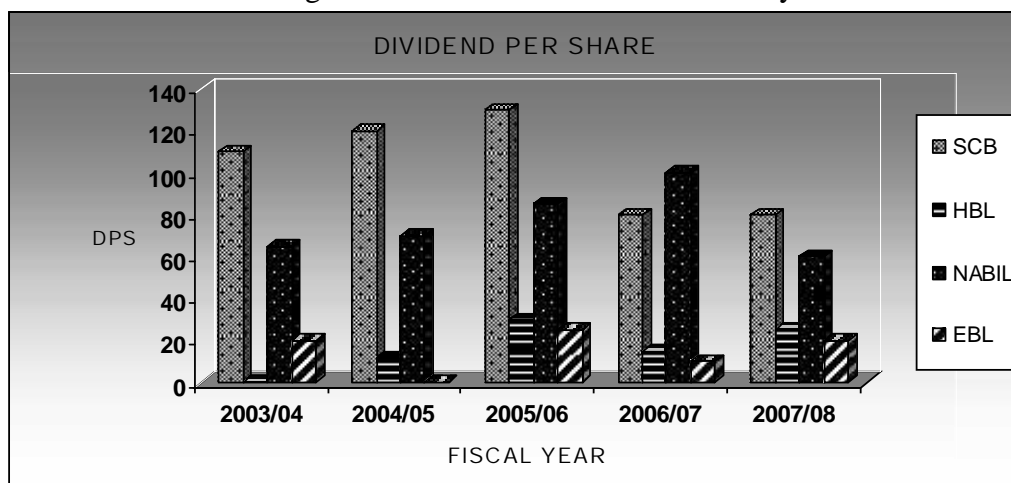
#### 4.1.1 Dividend Per Share Analysis

Table No. 4.1

Banks	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	Std.Dev	C.V.
SCB	110	120	130	80	80	104	20.59	19.80
HBL	-	11.58	30.00	15	25	16.32	10.52	64.46
NABIL	65	70	85	100	60	76	14.63	19.25
EBL	20	-	25	10	20	15	8.94	59.63

The above table (Table No. 4.1) shows the dividend per share (DPS) of the Banks from the year 2003/04 to 2007/08.

Figure No. 1: Dividend Per Share Analysis



The chart depicts the picture of Dividend Per Share of all the four banks from the fiscal year 2003/04 to 2007/08. Among all the four banks, SCB have paid highest dividend with an average of Rs.104. Rest of the three banks has dividend payments in lower two digit numbers. HBL has an average dividend payment of Rs.16.32. NABIL has an average of Rs.76 and EBL has an average DPS of Rs.15.

**Standard Chartered Bank Limited:**

SCBNL has average DPS of Rs.104. Its standard deviation is 20.59 and Coefficient of variation is 19.80%. In the year 2003/04 DPS was Rs.110. In the year 2004/05 DPS was Rs.120 which was higher in comparison with last year. In the year 2005/06 DPS was Rs.130 which was again higher in comparison to last year and was highest among the five years. In the year 2006/07 and 2007/08 dividend was Rs.80 in the both year which was lower than 2005/06 and was the lowest dividend paid. It clearly shows there was consistency in dividend payments in last two years. There are fluctuations in dividend payments from the year 2003/04 to 2005/06.

Its coefficient of variation shows that there is 19.80% fluctuation in DPS except in the year 2006/07 and 2007/08.

#### **Himalayan Bank Limited:**

HBL has average DPS of Rs.16.32 and its standard deviation is 10.52. The coefficient of variation is 64.46%. The coefficient of variation shows that there is 64.46% fluctuation in DPS which means that there is no consistency in DPS. The coefficient of variation of this bank is highest among other banks because the bank did not pay dividend in the year 2003/04.

In the year 2003/04 no dividend was paid. In the year 2004/05 DPS was Rs.11.58. In the year 2005/06 DPS was Rs.30 which was more than two times higher than previous year. In the year 2006/07 DPS was Rs.15 which was lower in comparison to last year. In the year 2007/08 DPS was Rs.25 which was again higher than previous year's DPS.

#### **NABIL Bank Limited:**

NABIL has average DPS of Rs.76 and its standard deviation is 14.63. The coefficient of variation is 19.25%. The coefficient of variation shows that there is 19.25% fluctuation in DPS which means that there is no consistency in DPS.

In the year 2003/04 the DPS was Rs.65 and in the year 2004/05 the DPS was Rs.70 which was higher than the DPS of previous year. In the year 2005/06 the DPS was Rs.85 which was again higher than previous year. In the year 2006/07 the DPS was Rs.100 which was the highest among five fiscal years. In the year 2007/08 the DPS was Rs.60 which was lower than previous year and the lowest among five fiscal years.

#### **Everest Bank Limited:**

EBL has average DPS of Rs.15. Its standard deviation is 8.94 and its coefficient of variation is 59.63%. In the year 2003/04 the DPS was Rs.20. In the year 2004/05, the bank did not pay any dividend. In the year 2005/06, DPS was Rs. 25 which was higher in comparison with last year's DPS and was the highest dividend paid among five fiscal years. In the year 2006/07, DPS was Rs. 10 which was lower than previous year. In the year 2007/08 the DPS was Rs.20 which was higher in comparison to last year.

Its coefficient of variation shows that there is 59.63% fluctuation in DPS except in the year 2002/03 and 2003/04

Above analysis shows that DPS of sample banks are not consistent. Average DPS of SCB bank is highest among the sample banks with Rs.104 and EBL bank has the lowest DPS of Rs.15. From the study of coefficient of variation of DPS of SCB,

HBL, NABIL and EBL are 19.80%, 64.46% 19.25% and 59.63% respectively. It shows SCB has lower fluctuation in dividend payment among other banks. HBL, EBL have higher fluctuation in dividend payments. Since, these banks have not paid dividend in year 2003/04 (HBL) and 2004/05 (EBL).

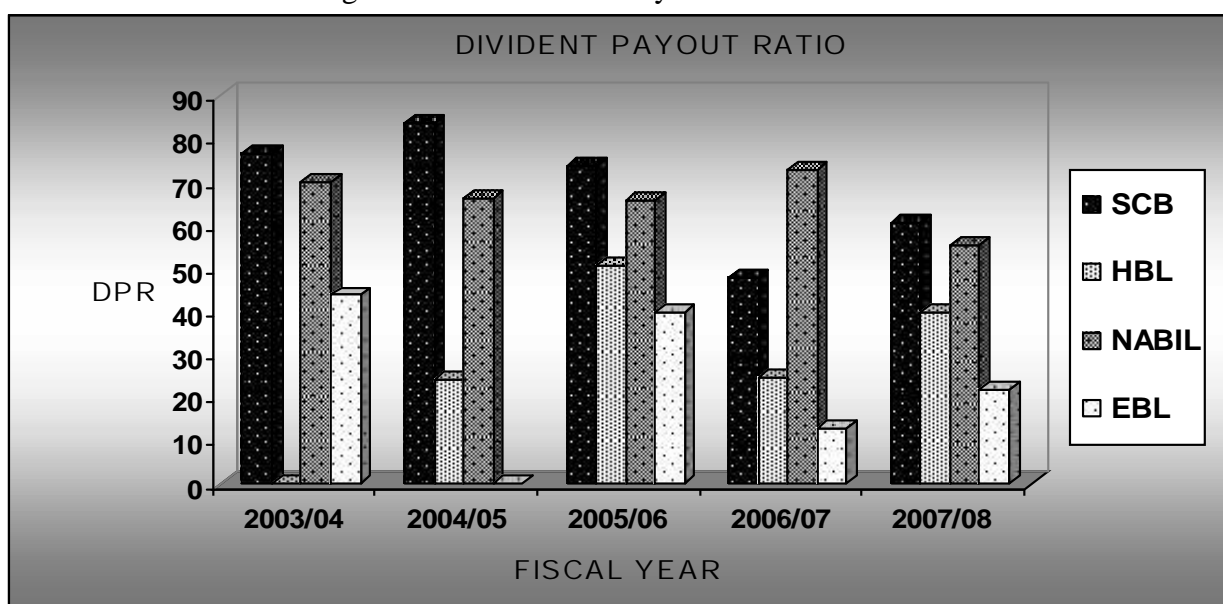
#### 4.1.2 Dividend Payout Ratio

Table 4.2

Company	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	Std.Dev	C.V
SCB	76.63	83.83	73.93	47.8	60.64	68.57	12.81	18.69
HBL	-	24.17	50.64	24.73	39.85	27.88	17.10	61.34
NABIL	70.19	66.36	65.78	72.95	55.40	66.14	5.97	9.03
EBL	43.86	-	39.81	12.76	21.78	23.64	16.44	69.53

The above table (Table No. 4.1.2) shows the Dividend payout ratio (DPR) of the Banks from the year 2003/04 to 2007/08.

Figure No. 2: Dividend Payout Ratio



The chart depicts the picture of Dividend Payout Ratio of all the four banks from the fiscal year 2003/04 to 2007/08. Among all the four banks, SCB has paid highest D/P Ratio with an average of 68.57 %. Rest of the three banks has lower D/P Ratio. HBL has an average D/P Ratio of 27.88 %. NABIL has an average D/P Ratio of 66.14 % and EBL has the lowest average D/P Ratio of 23.64 %.

#### Standard Chartered Bank Limited:

SCB has average D/P Ratio of 68.57 % and its standard deviation is 12.81. The coefficient of variation is 18.69%. This indicates that there is 18.69% fluctuation in D/P Ratio. The D/P Ratio of the bank in the year 2003/04 was 76.63 % increased to 83.83% in year 2004/05. In the year 2005/06 the D/P ratio decreased to 73.93% in comparison to last year. In the year 2006/07 it further decreased to 47.8% and in the year 2007/08 the D/P ratio increased to 60.64%.

### **Himalayan Bank Limited:**

The average D/P Ratio of HBL is 27.88%. Its standard deviation is 17.10 and coefficient of variation is 61.34%. This indicates that there is 61.34% fluctuation in D/P Ratio. In year 2003/04 the bank did not paid any dividend. In the year 2004/05 the D/P ratio was 24.17%, the D/P Ratio increases to 50.64% in the year 2005/06 followed by 24.73% in the year 2006/07. In the year 2007/08 the D/P ratio was 39.85%.

### **NABIL Bank Limited:**

The average D/P Ratio of NABIL is 66.14%. Its standard deviation is 5.97 and coefficient of variation is 9.03%. This indicates that there is 9.03% fluctuation in D/P Ratio. The D/P Ratio of the bank in year 2003/04 was 70.19% followed by 66.36% in the year 2004/05. In the year 2005/06 the D/P ratio was 65.78% and increases to 72.95% in the year 2006/07 and is the highest D/P ratio after that the D/P ratio decreases to 55.40% in the year 2007/08.

### **Everest Bank Limited:**

The average D/P Ratio of EBL is 23.64%. Its standard deviation is 16.44 and coefficient of variation is 69.53%. This indicates that there is 69.53% fluctuation in D/P Ratio. The D/P Ratio of the bank in year 2003/04 was 43.86%, the bank did not paid any dividend in the year 2004/05 and after that the D/P Ratio increases to 39.81% in the year 2005/06. In the year 2006/07, the D/P Ratio was 12.76% which is lower in comparison to previous years. The D/P ratio in the year 2007/08 was 21.78% which was increased comparison to last year.

Finally, SCB and NABIL have higher D/P Ratio and HBL and EBL have lower D/P Ratio. There is greater consistency in D/P Ratio of SCB and NABIL. HBL and EBL have highest fluctuation in D/P Ratio. The D/P Ratio of the banks have fluctuated in range of 9.03% to 69.53% as indicated by the respective coefficient of variation of the banks. D/P Ratio of all the banks are fluctuating from year to year.

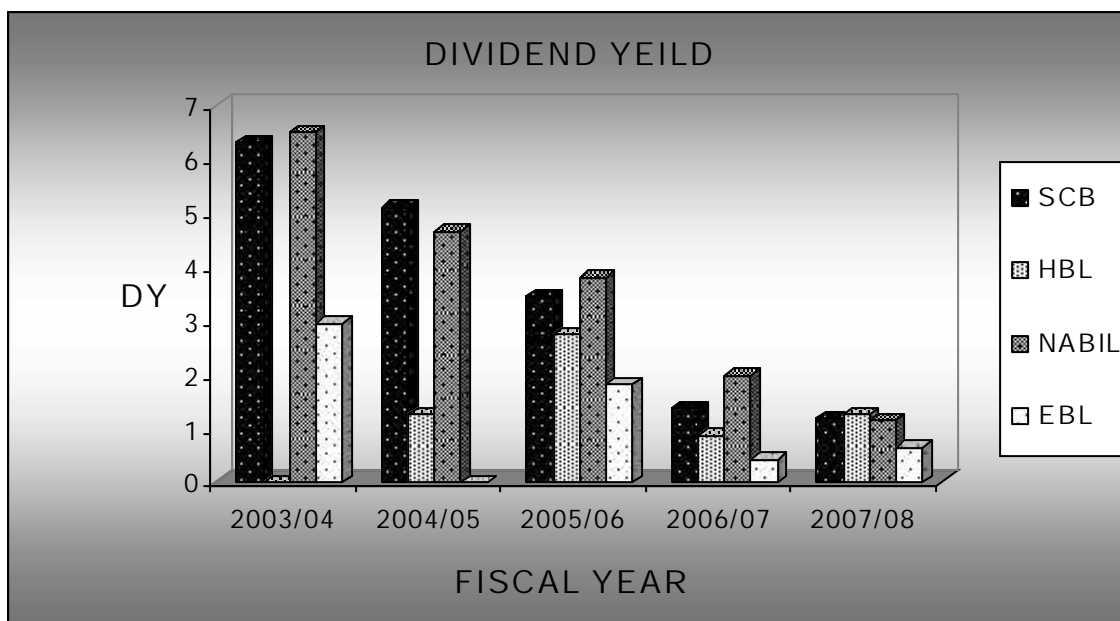
### **4.1.3 Dividend Yield**

Table 4.3

Company	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	Std.Dev	C.V
SCB	6.3	5.1	3.44	1.36	1.17	3.47	2.02	58.16
HBL	-	1.26	2.73	0.86	1.26	1.22	0.88	72.28
NABIL	6.5	4.65	3.79	1.98	1.14	3.61	1.91	52.86
EBL	2.94	-	1.81	0.41	0.64	1.16	1.07	92.60

The above table (Table No. 4.1.3) shows the dividend yield (DY) of the Banks from the year 2003 to 2007/08. The dividend yield shows that how much is the DPS on MPS. So, higher the dividend yield, It is more desirable.

Figure No. 3: Dividend Yield Analysis



The chart depicts the picture of Dividend Yield of all the four banks from the fiscal year 2003/04 to 2007/08. Among all the four banks, NABIL has the highest dividend yield with an average of 3.61%. SCB has an average dividend yield of 3.47%. HBL has an average dividend yield of 1.22% and EBL has an average DPS of 1.16%.

#### **Standard Chartered Bank Limited:**

SCB has average dividend yield of 3.47% and its standard deviation is 2.02%. The coefficient of variation is 58.16%. This indicates that there is 58.16% fluctuation in dividend yield of the bank.

In the year 2003/04, the DY was 6.3%. In the year 2004/05, the DY was 5.1% which was again lower than previous year. In the year 2005/06, the DY further decreased to 3.44%. The DY of the year 2006/07 was again decreased to 1.36%. The DY in the year 2007/08 was 1.17% which is again lower in comparison to previous year's DY.

#### **Himalayan Bank Limited:**

The average dividend yield of HBL is 1.22%. Its standard deviation is 0.88%. The coefficient of variation is 72.28% which indicates that there is 72.28% fluctuation in dividend yield

In the year 2003/04, the bank did not pay any dividend. In the year 2004/05, the DY was 1.26%. In the year 2005/06, the DY was 2.73% which was lower in comparison to last year. The DY of the year 2006/07 was 0.86% which is again lower in comparison to previous year's DY. In the year 2007/08 the DY was 1.26% which was higher in comparison to last year's DY.

#### **NABIL Bank Limited:**

The average dividend yield of NABIL is 3.61%. Its standard deviation is 1.91%. The coefficient of variation is 52.86% which indicates that there is 52.86% fluctuation in dividend yield.

In the year 2003/04, the DY was 6.5%. In the year 2004/05 the DY was 4.65% which was lower in comparison to last year. In the year 2005/06 it further decreased to 3.79 %. The DY in the year 2006/07 was 1.98% which was again lower in comparison to last year's DY and in the year 2007/08 the DY again decreased to 1.14% and was the lowest DY among five fiscal years.

**Everest Bank Limited:**

The average dividend yield of EBL is 1.16%. Its standard deviation is 1.07%. The coefficient of variation is 92.60% which indicates that there is 92.60% fluctuation in dividend yield. The fluctuation is highest among other banks and at the same time very low dividend yield.

In the year 2003/04, the DY was 2.94%. In the year 2004/05, the bank did not pay any dividend. In the year 2005/06, the DY was 1.81% which was lower than previous year. The DY of the year 2006/07 was 0.41% which was again lower in comparison to previous year's DY. In the year 2007/08 the DY was 0.64% which was higher in comparison to last year's DY.

Finally, on the average the dividend yield of NABIL has the highest average value. The coefficient of variation shows that the highest fluctuating dividend yield is EBL with 92.60%. The dividend yield of HBL and EBL are lower than other banks.

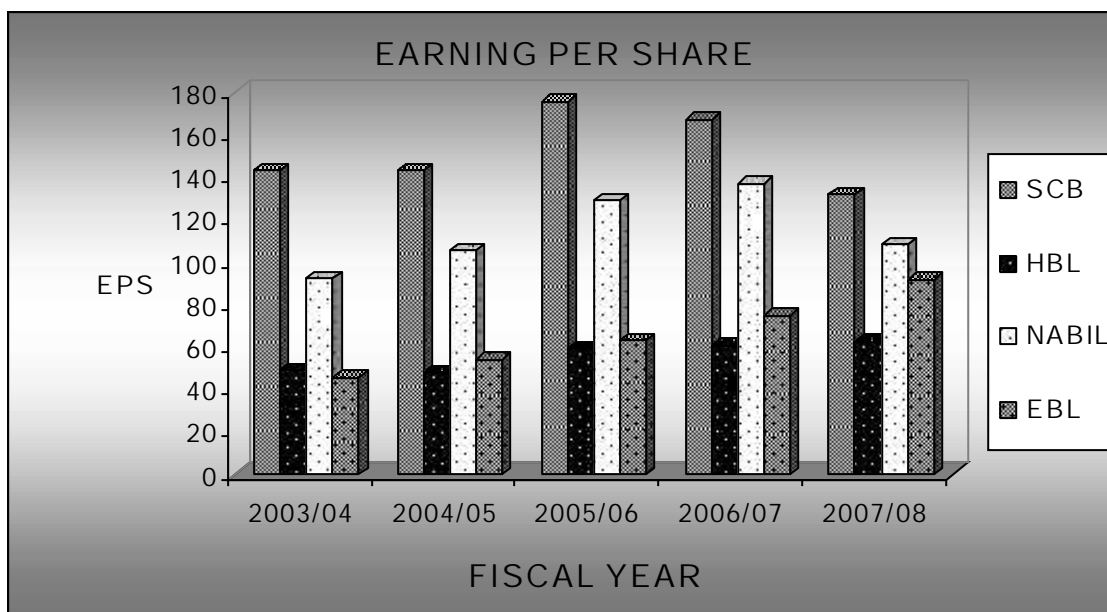
**4.1.4 Earning per Share**

Table 4.4

Company	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	Std.Dev	C.V
SCB	143.55	143.14	175.84	167.37	131.92	152.36	16.47	10.81
HBL	49.05	47.91	59.24	60.66	62.74	55.92	6.19	11.06
NABIL	92.61	105.49	129.21	137.08	108.31	114.54	16.28	14.21
EBL	45.6	54.2	62.8	74.8	91.82	65.84	16.18	24.58

The above table (Table No. 4.1.4) shows the earning per share (EPS) of the Banks from the year 2003/04 to 2007/08.

Figure No. 4: Earning Per Share Analysis



The chart depicts the picture of Earning Per Share of all the four banks from the fiscal year 2003/04 to 2007/08. Among all the four banks, the average EPS of SCB is the highest of i.e. Rs.152.36. HBL has an average EPS of Rs.55.92. NABIL has an average EPS of Rs.114.54 and EBL has an average EPS of Rs.65.84.

#### **Standard Chartered Bank Limited:**

SCB has average EPS of Rs.152.36 and its standard deviation is Rs.16.47. The coefficient of variation is 10.81%. The CV of the bank indicates that there is 10.81% fluctuation in EPS.

In the year 2003/04, the EPS was Rs.143.55. In the year 2004/05, the EPS was Rs.143.14 which was lower than previous year. In the year 2005/06, the EPS was Rs.175.84 which was more than last year. The EPS of the year 2006/07 was Rs.167.37 which was lower in comparison to previous year's EPS. In the year 2007/08 the EPS was Rs.131.92 which was again lower in comparison to the last year's EPS.

#### **Himalayan Bank Limited:**

The average EPS of HBL is Rs.55.92. Its standard deviation is Rs.6.19. The coefficient of variation is 11.06% which indicates that there is 11.06% fluctuation in EPS.

In the year 2003/04, the EPS was Rs.49.05. In the year 2004/05, the EPS was Rs.47.91 which was lower than previous year. In the year 2005/06, the EPS was Rs.59.24 which is more than last year. The EPS of the year 2006/07 was Rs.60.66 which is again higher in comparison to previous year's EPS. In the year 2007/08 the EPS was Rs.62.74 which was again higher than previous year's EPS.

#### **NABIL Bank Limited:**

The average EPS of NABIL is Rs.114.54. Its standard deviation is Rs.16.28. The coefficient of variation is 14.21% which indicates that there is 14.21% fluctuation in EPS of the bank.

In the year 2003/04, the EPS was Rs.92.61. In the year 2004/05 the EPS was Rs.105.49 which is higher than last year. In the year 2005/06, the EPS was Rs.129.21 which was again higher in comparison to last year. In the year 2006/07 the EPS was Rs.137.08 which was again higher in comparison to last year's EPS. The EPS in the year 2007/08 was Rs.108.31 which was lower in comparison to last year's EPS.

**Everest Bank Limited:**

The average EPS of EBL is Rs.65.84. Its standard deviation is Rs.16.28. The coefficient of variation is 24.58% which indicates that there is 24.58% fluctuation in EPS of the bank.

In the year 2003/04 the EPS was Rs.45.6. In the year 2004/05 the EPS was Rs.54.2 which was higher than last year. The EPS in the year 2005/06 was 62.8 which was higher than previous year. In the year 2006/07 the EPS was Rs.74.8 which was again higher in comparison to last year's EPS and in the year 2007/08 the EPS was Rs.91.82 which was highest among five fiscal years.

Finally, EPS of the Banks seems encouraging. SCB has the highest EPS among other banks in the study. There seems relative fluctuation of 10.81% to 24.58% fluctuation in EPS of the banks. NABIL has the highest fluctuation of EPS. Except SCB and NABIL, the EPS of HBL and EBL have been decreased. SCB has better position in the market due to higher EPS of the company. Since, Higher the EPS, better position is seen in the stock market.

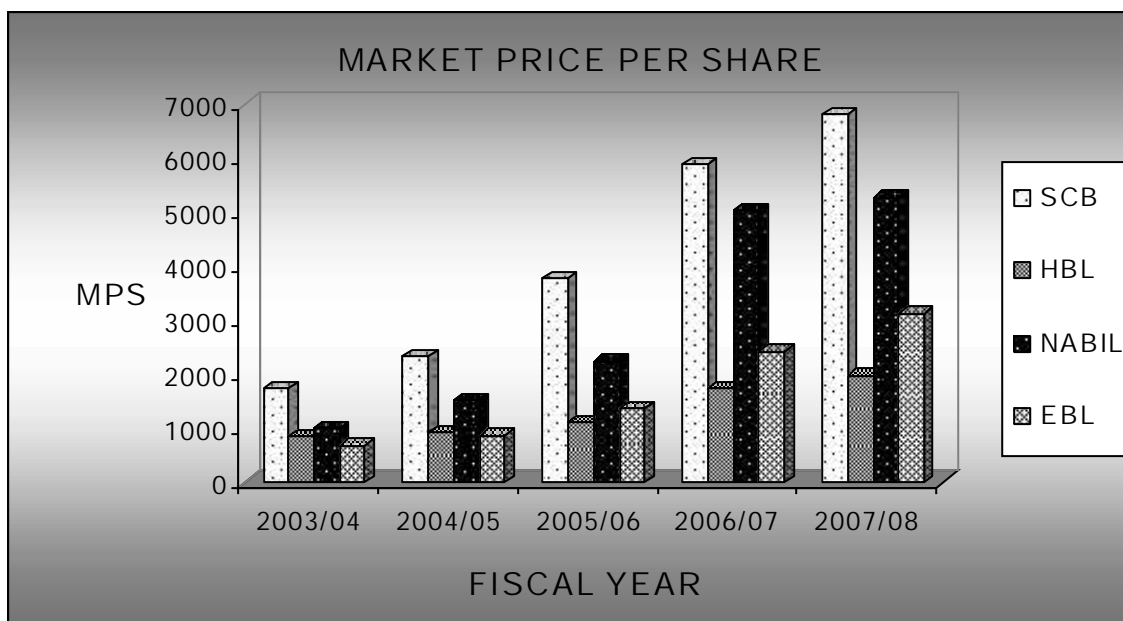
**4.1.5 Market Price Per Share**

Table 4.5

Company	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	Std.Dev	C.V.
SCB	1745	2345	3775	5900	6830	4119	1970.93	47.85
HBL	840	920	1100	1740	1980	1316	458.41	34.83
NABIL	1000	1505	2240	5050	5275	3014	1799.43	59.70
EBL	680	870	1379	2430	3132	1698.2	939.77	55.34

The above table (Table No. 4.1.4) shows the Market price per share (MPS) of the Banks from the year 2003/04 to 2007/08.

Figure No. 5: Market Price Per Share Analysis



The chart depicts the picture of Market Price Per Share of all the four banks from the fiscal year 2003/04 to 2007/08. Among all the four banks, the average MPS of SCB is the highest of Rs.4,119. HBL has an average EPS of Rs.1,316. NABIL has an average EPS of Rs.3,014 and EBL has an average EPS of Rs.1,698.20.

#### **Standard Chartered Bank Limited:**

SCB has average MPS of Rs.4119 and its standard deviation is Rs. 1970.73. The coefficient of variation is 58.13%. The CV of the bank indicates that there is 47.85% fluctuation in MPS.

In the year 2003/04, the MPS was Rs.1745. In the year 2004/05, the MPS was Rs.2345 which was higher than previous year. In the year 2005/06, the MPS further increased to Rs.3775. The MPS of the year 2006/07 was Rs.5900 which was again higher in comparison to previous year's MPS. In the year 2007/08 the MPS was Rs.6830 which was highest among the five fiscal years.

#### **Himalayan Bank Limited:**

The average MPS of HBL is Rs.1316. Its standard deviation is Rs.458.41. The coefficient of variation is 34.83% which indicates that there is 34.83% fluctuation in MPS of the Bank.

In the year 2003/04, the MPS was Rs.840. In the year 2004/05, the MPS was Rs.920 which was higher than previous year. In the year 2005/06, the MPS further increased to Rs.1100. The MPS of the year 2006/07 was Rs.1740 which is again higher in comparison to previous year's MPS. In the year 2007/08 the MPS was Rs.1980 which was highest among the five fiscal years.

#### **NABIL Bank Limited:**

The average MPS of NABIL is Rs.3014. Its standard deviation is Rs.1799.43. The coefficient of variation is 59.70% which indicates that there is 59.70% fluctuation in MPS of the bank.

In the year 2003/04, the MPS was Rs.1000. In the year 2004/05, the MPS was Rs.1505 which was higher than previous year. In the year 2005/06, the MPS was Rs.2240 which was again higher than last year. The MPS of the year 2006/07 was Rs.5050 which was two times higher than previous year. In the year 2007/08 the MPS was Rs.5275 which was again higher in comparison to previous year's MPS.

**Everest Bank Limited:**

The average MPS of EBL is Rs.1698.20. Its standard deviation is Rs.939.77. The coefficient of variation is 55.34% which indicates that there is 55.34% fluctuation in MPS of the bank.

In the year 2003/04, the MPS was Rs.680. In the year 2004/05, the MPS was Rs.870 which was higher than previous year. In the year 2005/06, the MPS was Rs.1379 which was again higher in comparison to last year. The MPS of the year 2006/07 further increased to Rs.2430. in the year 2007/08 the MPS was Rs.3132 which was again higher in comparison to previous year's MPS.

Finally, the average MPS of SCB, HBL, NABIL and EBL seems encouraging. So, we can say that SCB is the most appreciable bank among the selected ones since it has the highest average MPS. There is less fluctuation in the MPS of HBL since HBL have lower coefficient of variation. The MPS of the banks has fluctuated in range of 34.83% to 59.70% as indicated by the respective CV of the banks. HBL has the highest fluctuating MPS compared to other banks.

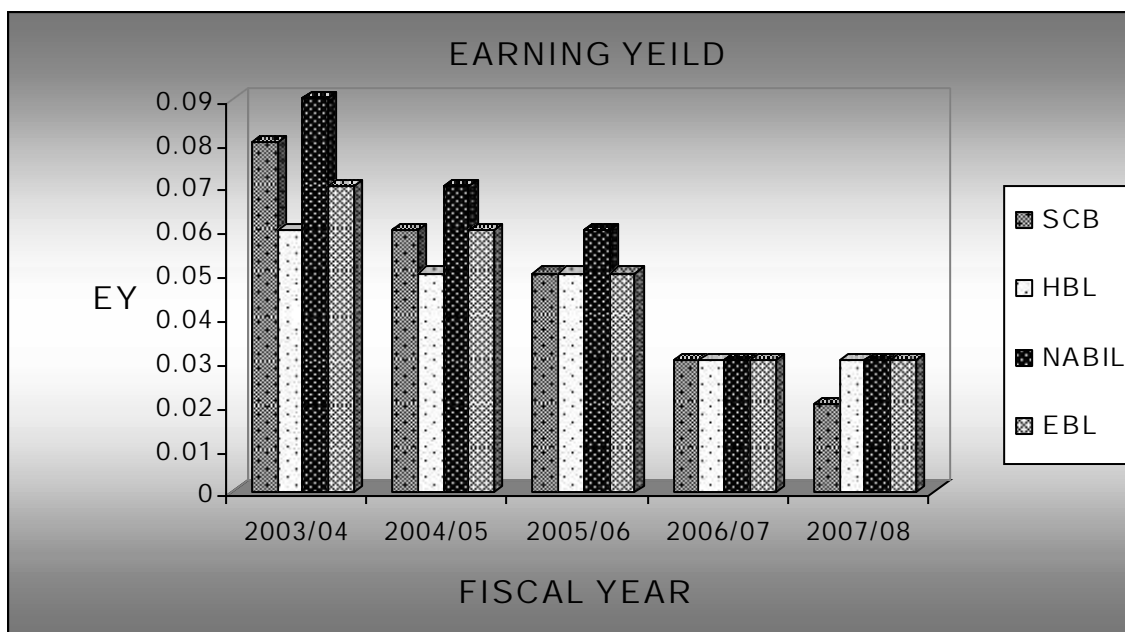
**4.1.6 Earning Yield**

Table 4.6

Company	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	Std.Dev	C.V
SCB	0.08	0.06	0.05	0.03	0.02	0.05	0.02	44.49
HBL	0.06	0.05	0.05	0.03	0.03	0.04	0.01	27.27
NABIL	0.09	0.07	0.06	0.03	0.03	0.06	0.02	41.65
EBL	0.07	0.06	0.05	0.03	0.03	0.06	0.02	33.33

The above table (Table No. 4.1.6) shows the Earning Yield (EY) of the Banks from the year 2002/03 to 2006/07.

Figure No. 6: Earning Yield Analysis



The chart depicts the picture of Dividend Yield of all the four banks from the fiscal year 2003/04 to 2007/08. Among all the four banks, NABIL has the highest earning yield with an average of 0.06 %. SCB and EBL have an average earning yield of 0.05 %. HBL has an average of 0.04 %.

#### **Standard Chartered Bank Limited:**

The average EY of SCB is 0.05% and its standard deviation is 0.0214%. The coefficient of variation is 44.49%. The Coefficient of variation of the bank indicates that there is 44.49% fluctuation in EY. The fluctuation is highest among other banks. The EY of the bank in the year 2003/04 was 0.08%. After that EY of the bank decreases to 0.06% in 2004/05. Again the EY of the bank decreases to 0.05% and 0.03% during 2005/06 and 2006/07 respectively. In 2007/08 the EY again decreases to 0.03%.

#### **Himalayan Bank Limited:**

The average EY of HBL is 0.04%. Its standard deviation is 0.0120%. The coefficient of variation is 27.27% which indicates that there is 27.27% fluctuation in EY of the Bank. The EY of the bank in the year 2003/04 was 0.06% and in the year 2004/05 and 2005/06 was 0.05% in both the years. Again the EY of the bank decreases to 0.03% during 2006/07 and 2007/08 respectively.

#### **NABIL Bank Limited:**

The average EY of NABIL is 0.06%. Its standard deviation is 0.0233%. The coefficient of variation is 41.65% which indicates that there is 41.65% fluctuation in EY of the bank. The EY of the bank in the year 2003/04 was 0.09%. After that EY of the bank increases to 0.07% in 2004/05. Again the EY of the bank decreases to 0.06% during 2005/06. In 2006/07 and 2007/08 the EY again decreases to 0.03%.

#### **Everest Bank Limited:**

The average EY of NABIL is 0.05%. Its standard deviation is 0.016%. The coefficient of variation is 33.33% which shows that there is 33.33% fluctuation in EY

of the bank. The EY of the bank in the year 2003/04 was 0.07%. In the year 2004/05 EY decreases to 0.06%. Again the EY of the bank decreases to 0.06% 2005/06. In 2006/07 and 2007/08 the EY again decreases to 0.03%.

Finally, the average EY of NABIL is the highest among other banks. There is less fluctuation in the EY of SCBNL and NABIL. The EY of the banks has fluctuated in range of 27.27% to 44.49% as indicated by the respective CV of the banks. HBL has the highest fluctuating EY compared to other banks.

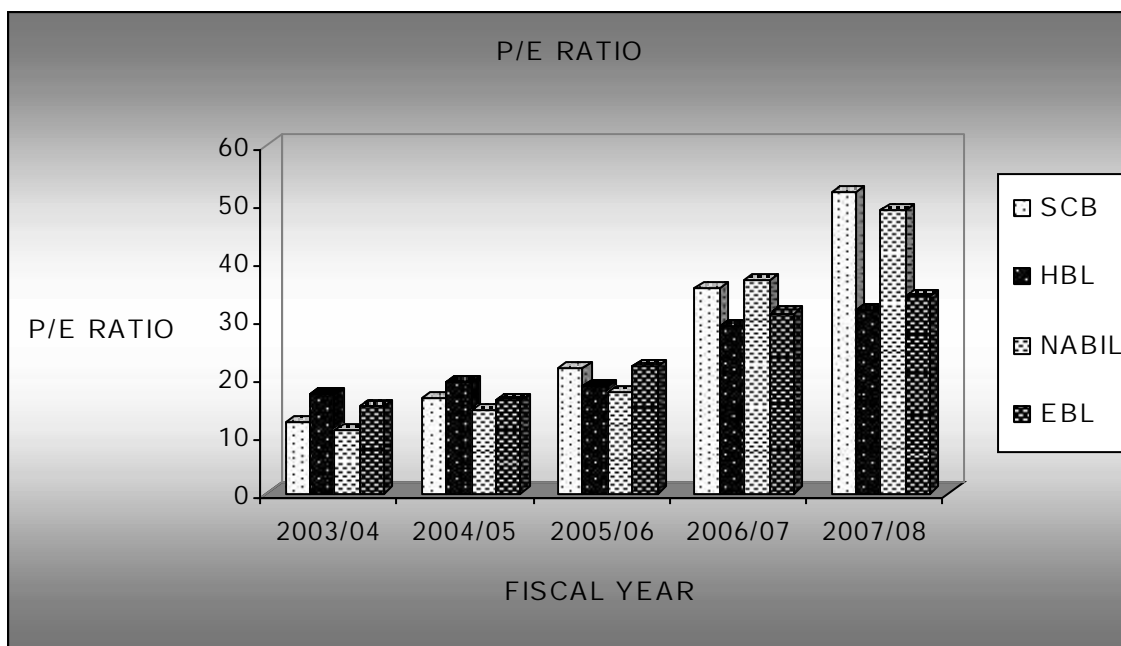
#### 4.1.7 Price Earning Ratio

Table 4.7

Company	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	Std.Dev	C.V
SCB	12.16	16.38	21.47	35.25	51.77	27.41	14.45	52.74
HBL	17.12	19.2	18.57	28.69	31.56	23.03	5.90	25.64
NABIL	10.80	14.27	17.34	36.84	48.70	25.59	14.67	57.31
EBL	14.9	16	22	31	34.1	23.6	7.76	32.88

The above table (Table No. 4.1.7) shows the price earning ratio (P/E Ratio) of the Banks from the year 2002/03 to 2006/07.

Figure No. 7: Price Earning Ratio Analysis



The chart depicts the picture of Price Earning Ratio of all the four banks from the fiscal year 2003/04 to 2007/08. Among all the four banks, the average P/E Ratio of SCB is the highest of 27.41 %. HBL has an average P/E Ratio of 23.03 %. EBL has an average P/E Ratio of 23.60 % and NABIL has an average P/E Ratio of 25.59 %.

#### **Standard Chartered Bank Limited:**

SCB has average P/E Ratio of 27.41 and its standard deviation is 14.45. The coefficient of variation is 52.74%. The CV of the bank indicates that there is 52.74% fluctuation in P/E Ratio.

In the year 2003/03, the P/E Ratio was 12.16 and in the year 2004/05, the P/E ratio was 16.38 which is higher compared to last year. In the year 2005/06, the P/E ratio was 21.47 which was again higher than previous year. In the year 2006/07, the P/E Ratio further increased to 35.25. The P/E Ratio of the year 2007/08 was 51.77 which is again higher in comparison to previous year's P/E Ratio.

#### **Himalayan Bank Limited:**

The average P/E Ratio of HBL is 23.03. Its standard deviation is 5.90. The coefficient of variation is 25.64% which indicates that there is 25.64% fluctuation in P/E Ratio of the Bank.

In the year 2003/04, the P/E Ratio was 17.12 and in the year 2004/05, the P/E ratio was 19.2 which are higher compared to last year. In the year 2005/06, the P/E ratio was 18.57 which were lower than previous year. In the year 2006/07 the P/E Ratio was 36.84 which were higher than last year. The P/E Ratio of the year 2007/08 was 31.56 which are higher in comparison to previous year's P/E Ratio.

#### **NABIL Bank Limited:**

The average P/E Ratio of NIBL is 25.59. Its standard deviation is 14.67. The coefficient of variation is 57.31% which indicates that there is 57.31% fluctuation in P/E Ratio of the bank.

In the year 2003/04, the P/E Ratio was 12.16 and in the year 2004/05, the P/E ratio was 14.27 which were higher compared to last year. In the year 2005/06, the P/E ratio was 17.34 which were higher than previous year. In the year 2006/07, the P/E Ratio was 36.84 which were again higher than last year. The P/E Ratio of the year 2007/08 was 48.7 which are higher in comparison to previous year's P/E Ratio.

**Everest Bank Limited:**

The average P/E Ratio of EBL is 23.60. Its standard deviation is 7.76. The coefficient of variation is 32.88% which indicates that there is 32.88% fluctuation in P/E Ratio of the bank.

In the year 2003/04, the P/E Ratio was 14.90. In the year 2004/05, the P/E ratio was 16 which were higher than previous year. In the year 2005/06, the P/E Ratio was 22 which were again higher than last year. The P/E Ratio of the year 2006/07 was 31 and 34.1 in the year 2007/08 which was higher in comparison to previous year's P/E Ratio.

Finally, the average P/E Ratio of SCB is in the highest position. NABIL, EBL and HBL are also in good position. There is less fluctuation in the P/E Ratio of HBL and EBL since they have lower coefficient of variation. The P/E Ratio of the banks has fluctuated in range of 25.64% to 57.31% as indicated by the respective CV of the banks. SCB and NABIL have higher fluctuation in P/E Ratio compared to other two banks.

**4.2 Correlation Analysis**

**4.2.1. Correlation between Earning per Share (EPS) and Dividend Per Share (DPS)**

Table No. 4.8

Company	Coefficient of correlation	Relationship	R <sup>2</sup>	6P.E	Sig/Insig
SCB	0.319	Direct	0.102	1.6254	Insig
HBL	0.764	"	0.583	0.7548	Sig
NABIL	0.897	"	0.805	0.3529	Sig
EBL	0.177	"	0.031	1.7538	Insig

The above table depicts the relationship between EPS and DPS of the four Banks. Coefficient of correlation (r) between EPS and DPS of SCB, HBL, NABIL and EBL are 0.319, 0.764, 0.897, and 0.177 respectively. Coefficient of determination between EPS and DPS of SCB is 0.102 which indicates that 10.2 percent variation is explained in the dependent variable DPS due to the changes in the value of independent variable EPS. Secondly coefficient of determination between EPS and DPS of HBL is 0.583 which indicates that the variations in the EPS explain 58.3 percent of the variations in DPS. In case of NABIL, the coefficient of determination is 0.805 which shows 80.5 percent variation is explained in DPS due to changes in EPS. Finally the coefficient of determination of EBL is 0.031 which indicates that the variations in the EPS explain 3.1 percent of the variation in DPS.

To measure the significance of the relationships between EPS and DPS probable error is calculated. The same table depicts that coefficient of correlation of four Banks. Since correlation coefficient of HBL and NABIL are greater than 6P.E. So, we can conclude that there is significant relationship between EPS and DPS. Coefficient of correlation of SCB and EBL are smaller than 6P.E. which indicates that there is insignificant relationship between EPS and DPS.

#### 4.2.2. Correlation between Earning per Share (EPS) and Market Price Per Share (MPS)

Table No. 4.9

Company	Coefficient of correlation	Relationship	R <sup>2</sup>	6P.E	Sig/Insig
SCB	0.003	Direct	0.00	1.8096	Insig
HBL	0.865	Direct	0.748	0.456	Sig
NABIL	0.534	Direct	0.286	1.2924	Insig
EBL	0.987	Direct	0.973	0.0488	Sigs

The above table depicts the relationship between EPS and MPS of the four Banks. Coefficient of correlation (r) between EPS and MPS of SCB, HBL, NABIL and EBL are 0.003, 0.865, 0.534, and 0.987 respectively. There is a direct relationship between EPS and MPS in all the four banks. Coefficient of determination between EPS and MPS of SCB is 00 which indicates that 00 percent variation is explained in MPS due to the changes in the value of EPS. In case of HBL, the coefficient of determination between EPS and MPS is 0.748 which indicates that explains 74.8 percent variations in MPS due to the variations in EPS. In case of NABIL, the coefficient of determination is 0.286 which shows 28.6 percent variation is explained in MPS due to changes in EPS. Finally the coefficient of determination of EBL is 0.973 which indicates that the variations in the EPS explain 97.3 percent of the variation in MPS.

To measure the significance of the relationships between EPS and MPS probable error is calculated. The same table depicts that coefficient of correlation of four Banks. Since correlation coefficient of HBL and EBL are greater than 6P.E. So, we can conclude that there is significant relationship between EPS and MPS. Coefficient of correlation of SCB and NABIL are smaller than 6P.E. which indicates that there is insignificant relationship between EPS and MPS.

#### 4.2.3 Correlation between Dividend Payout Ratio (DPR) and Market price per share (MPS)

Table No. 4.10

Company	Coefficient of correlation	Relationship	R <sup>2</sup>	6P.E	Sig/Insig
SCB	0.844	Direct	0.712	0.5213	Sig

HBL	0.419	"	0.176	1.491	Insig
NABIL	0.347	"	0.120	1.5924	Insig
EBL	0.218	"	0.047	1.725	Insig

The above table depicts the relationship between DPR and MPS of the four Banks. Coefficient of correlation (r) between DPR and MPS of SCB, HBL, NABIL and EBL 0.844, 0.419, 0.347 and 0.218 respectively. The figures indicate that all the banks have direct relationship between DPR and MPS. Coefficient of determination between DPR and MPS of SCB, HBL, NABIL and EBL are 0.712, 0.176, 0.120, and 0.047 respectively. The figure of SCB indicates that there is 71.2 percent variations are explained in MPS due to the changes in the value of DPR. Similarly, the figure of HBL explains 17.6 percent variations in MPS. In case of NABIL there is a 12 percent variation in MPS. Finally, the figure of EBL explains 4.7 percent variations in MPS due to the changes in DPR.

To measure the significance of the relationships between DPR and MPS probable error is calculated. The same table depicts that coefficient of correlation of four Banks. Since correlation coefficient of SCB is greater than 6P.E. So, we can conclude that there is significant relationship between DPR and MPS. And rest of the three banks coefficient of correlation is smaller than 6P.E. which indicates that there is insignificant relationship between DPR and MPS.

#### 4.2.4 Correlation between Dividend Per Share (DPS) and Market price per share (MPS)

Table No. 4.11

Company	Coefficient of correlation	Relationship	R <sup>2</sup>	6P.E	Sig/Insig
SCB	0.785	Direct	0.617	0.693	Sig
HBL	0.493	"	0.243	1.3698	Insig
NABIL	0.281	"	0.079	1.6668	Insig
EBL	0.182	"	0.033	1.7502	Insig

The above table depicts the relationship between DPS and MPS of the four Banks. Coefficient of correlation (r) between DPS and MPS of SCB, HBL, NABIL and EBL 0.785, 0.493, 0.281 and 0.182 respectively. The figures indicate that all the banks have direct relationship between DPS and MPS. Coefficient of determination between DPS and MPS of SCB, HBL, NABIL and EBL are 0.617, 0.243, 0.079, and 0.033 respectively. The figure of SCB indicates that there is 69.3 percent variation is explained in MPS due to the changes in the value of DPS. Similarly, the figure of HBL explains 24.3 percent variations in MPS. In case of NABIL there is 7.9 percent variation in MPS. Finally, the figure of EBL explains 3.3 percent variations in MPS due to the changes in DPS.

To measure the significance of the relationships between DPS and MPS probable error is calculated. The same table depicts that coefficient of correlation of four Banks. Since correlation coefficient of SCB is greater than 6P.E. So, we can conclude that there is significant relationship between DPS and MPS. And rest of the three banks coefficient of correlation is smaller than 6P.E. which indicates that there is insignificant relationship between DPS and MPS.

#### 4.2.5 Correlation between Dividend Yield (DY) and Market price per share (MPS)

Table No. 4.12

Company	Coefficient of correlation	Relationship	R <sup>2</sup>	6P.E	Sig/Insig
SCB	0.984	Direct	0.968	0.5791	Sig
HBL	0.056	"	0.003	1.8042	Insig
NABIL	0.957	"	0.915	1.5384	Insig
EBL	0.466	"	0.217	1.4172	Insig

The above table depicts the relationship between DPR and MPS of the four Banks. Coefficient of correlation (r) between DY and MPS of SCB, HBL, NABIL and EBL 0.984, 0.056, 0.957 and 0.466 respectively. The figures indicate that all the banks have direct relationship between DY and MPS. Coefficient of determination between DY and MPS of SCB, HBL, NABIL and EBL are 0.968, 0.003, 0.915, and 0.217 respectively. The figure of SCB indicates that there is 96.8 percent variation is explained in MPS due to the changes in the value of DY. Similarly, the figure of HBL explains 0.3 percent variations in MPS. In case of NIABIL there is 91.5 percent variation in MPS. Finally, the figure of EBL explains 21.7 percent variation in MPS due to the changes in DY.

To measure the significance of the relationships between DY and MPS probable error is calculated. The same table depicts that coefficient of correlation of four Banks. Since correlation coefficient of SCB is greater than 6P.E. So, we can conclude that there is significant relationship between DY and MPS. And rest of the three banks coefficient of correlation is smaller than 6P.E. which indicates that there is insignificant relationship between DY and MPS.

### 4.3 Regression Analysis

Regression Analysis is a statistical device and considered as a useful tool for determining the strength of relationship between two or more variables. With the help of this device we can estimate or predict the value of one variable when the value of other variable is known. The estimation has an important role in various sectors. So, this tool has been used for this study. The analysis has two parts.

#### 4.3.1 Dependent Variable DPS (Y) on EPS (X)

Regression Equation :  $Y = a + bX$

Table No. 4.13

Banks	No. of observation	Constant (a)	Regression Coefficient B	S.E. of b	R <sup>2</sup>	S.E. of Estimate	't' Value
SCB	5	43.323	0.398	.684	.102	25.19778	.582
HBL	5	-56.286	1.298	.634	.583	8.76506	2.049
NABIL	5	-16.348	0.806	.229	0.805	8.34196	3.518
EBL	5	8.560	0.098	.314	.031	11.3647	.311

The above table depicts the major output of the simple regression analysis between DPS (Y) and EPS (X) of four banks.

From the above regression equation, the regression Coefficient (b) SCB is -0.398 which indicates that one rupee increase in EPS leads to 0.39 paise increase in DPS. The coefficient of determination is 0.102. This indicates that only 10.2 percent variation in DPS explained by variations in EPS. The value of constant (a) is 43.323.

In case of NABIL the regression coefficient (b) is 1.298 which indicates that one rupee increase in EPS leads to Rs.1.298 increase in DPS. The coefficient of determination is 0.583. This indicates that only 58.30 percent variation in DPS explained by variations in EPS. The value of constant (a) is -56.286. In case of HBL the regression coefficient (b) is 0.806. It indicates that one rupee increase in EPS leads to a increase of 80.6 paise in DPS. In case of EBL, its regression coefficient is 0.098 which shows that one rupee increase in EPS leads to 9.8 paise increase in DPS.

The regression coefficients (b) of SCB, HBL and EBL are not statistically significant at 5% level of significance since its 't' value is smaller than tabulated value. Whereas The regression coefficients (b) of NABIL is statistically significant at 5% level of significance since its 't' value is greater than tabulated value.

#### 4.3.2 Dependent Variable MPS (Y) on DPS (X)

$Y = a + bX$

Table No. 4.14

Banks	No. of observation	Constant (a)	Regression Coefficient	S.E. of b	R <sup>2</sup>	S.E. of Estimate	't' Value
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			B				
SCB	5	11937.64	-75.179	34.2	.617	1574.87	2.198
HBL	5	965.087	21.507	21.89	.243	514.75	.983
NABIL	5	390.935	34.514	68.16	.079	2229.73	.506
EBL	5	1411.325	19.649	59.65	.033	1192.97	.321

The above table depicts the major output of the simple regression analysis between MPS (Y) and DPS (X) of four banks.

From the above regression equation, the regression Coefficient (b) of SCB is -75.179 which indicate that one rupee increase in DPS leads to Rs.75.18 decrease in MPS. The coefficient of determination is 0.617. This indicates that only 61.70 percent variation in MPS explained by variations in DPS. The value of constant (a) is 11937.64.

In case of HBL the regression coefficient (b) is positive. i.e. 21.507 which indicate that one rupee increase in DPS leads to increase of Rs.21.507 in MPS. The coefficient of determination is .243 which shows that 24.3 percent variation in MPS explained by variation in DPS. In case of NABIL and EBL, The regression coefficient are 34.514 and 19.649 which indicates that one rupee increase in DPS leads to Rs.34.51 and Rs.19.65 increase in MPS respectively.

The coefficient of determination is .079 and .033 which shows that 7.9 percent and 3.3 percent variation in MPS explained by variation in DPS. The regression coefficients (b) of HBL, NABIL and EBL are not statistically significant at 5% level of significance since its 't' value is smaller than tabulated value. Whereas, the regression coefficients (b) of SCB is statistically significant at 5% level of significance since its 't' value is greater than tabulated value.

#### 4.3.3 Dependent Variable MPS (Y) on EPS (X)

$$Y = a + bX$$

Table No. 4.15

Banks	No.of observatio	Constant (a)	Regression Coefficient B	S.E. of b	R <sup>2</sup>	S.E.of Estimate	't' Value
SCB	5	4061.28	0.379	69.071	.00	2544.44	0.005
HBL	5	-2267.6	64.085	21.475	.748	297.118	2.984
NABIL	5	-3752.95	59.079	53.942	.286	1963.45	1.095
EBL	5	-2073.87	57.288	5.475	.973	198.1265	10.46

The above table depicts the major output of the simple regression analysis between MPS (Y) and EPS (X) of four banks.

From the above regression equation, the regression Coefficient (b) of SCB is 0.379 which indicate that one rupee increase in EPS leads to 37.9 paisa increase in MPS. The coefficient of determination is 00. This indicates that only zero percent variation in MPS explained by variations in EPS. The value of constant (a) is 4061.28.

In case of HBL the regression coefficient (b) is positive. i.e. 64.085 which indicate that one rupee increase in EPS leads to a increase of Rs.64.085 in MPS. The coefficient of determination is .748 which shows that 74.8 percent variation in MPS explained by variation in EPS. In case of NABIL and EBL, The regression coefficient are 59.079 and 57.288 which indicates that one rupee increase in EPS leads to Rs.59.079 and Rs.57.288 increase in MPS respectively.

The coefficient of determination is .286 and .973 which shows that 28.6 percent and 97.3 percent variation in MPS explained by variation in EPS. The regression coefficient (b) of HBL and EBL are statistically insignificant at 5 percent level of significance since the value of 't' is greater than tabulated value. But in case of SCB and NABIL the regression coefficient is not statistically significant at 5 percent level of significance since the value of 't' is smaller than the tabulated value.

#### 4.3.4 Dependent Variable MPS (Y) on DY (X)

$$Y = a + bX$$

Table No. 4.16

Banks	No.of observation	Constant (a)	Regression Coefficient B	S.E. of b	R <sup>2</sup>	S.E.of Estimate	't' Value
SCB	5	7545.135	960.027	100.06	.968	452.04	-9.594
HBL	5	1280.718	28.873	299.16	.003	590.894	.097
NABIL	5	6270.94	-901.701	158.45	.915	676.406	-5.691
EBL	5	2171.415	-407.94	446.83	.217	1073.269	-0.913

The above table depicts the major output of the simple regression analysis between MPS (Y) and DY (X) of four banks.

From the above regression equation, the regression Coefficient (b) of SCB is 960.027 which indicate that one rupee increase in DY leads to Rs.960.027 increase in MPS. The coefficient of determination is 0.968. This indicates that only 96.8 percent variation in MPS explained by variations in DY. The value of constant (a) is 7545.135.

In case of HBL the regression coefficient (b) is positive. i.e. 28.873 which indicate that one rupee increase in DY leads to increase of Rs.28.873 in MPS. The coefficient of determination is .003 which shows that 0.3 percent variation in MPS explained by variation in DY. In case of NABIL and EBL, The regression coefficient are -901.701 and -407.94 which indicates that one rupee increase in DY leads to Rs.901.701 and Rs.407.94 decrease in MPS respectively.

The coefficient of determination is .915 and .217 which shows that 91.5 percent and 21.7 percent variation in MPS explained by variation in DY.

The regression coefficient (b) of all the four Banks are not statistically significant at 5 percent level of significance since the value of 't' is smaller than tabulated value.

#### 4.3.5 Dependent Variable MPS (Y) on DPR (X)

$$Y = a + bX$$

Table No. 4.17

Banks	No.of Observation	Constant (a)	Regression Coefficient b	S.E. of b	R <sup>2</sup>	S.E.of Estimate	't' Value
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SCB	5	13018.39	-129.793	47.67	.712	1365.617	-2.723
HBL	5	1002.645	11.24	14.05	.176	537.268	.800
NABIL	5	9923.446	-104.473	163.2	.120	2178.963	-0.640
EBL	5	1992.188	-12.435	32.22	.047	1184.193	-0.386

The above table depicts the major output of the simple regression analysis between MPS (Y) and DPR (X) of four banks.

From the above regression equation, the regression Coefficient (b) of SCB is -129.793 which indicates that one percent increase in DPR leads to 129.79 percent decrease in MPS. The coefficient of determination is 0.712 this indicates that there is 71.2 percent variation in MPS explained by variations in DPR. The value of constant (a) is 13018.39.

In case of HBL the regression coefficient (b) is 11.24 which indicate that one percent increase in DPR leads to increase of 11.24 percent in MPS. The coefficient of determination is .176 which shows that 17.6 percent variation in MPS explained by variation in DPR. In case of NABIL and EBL, The regression coefficient is negative i.e. -104.473 and – 12.435 which indicates that one percent increase in DPR leads to 104.47 percent and 12.435 decrease in MPS. The coefficient of determination is .120 and .047 which shows that 12 percent and 4.7 percent variation in MPS explained by variation in DPR.

The regression coefficient (b) of all the four Banks are not statistically significant at 5 percent level of significance since the value of 't' is smaller than tabulated value

#### 4.4 Multiple Regression Analysis:

##### 4.4.1 Regression of MPS on EPS, DPS and DPR

$$\text{Regression Equation } P_t = a + b_1 E_t + b_2 D_t + D_t$$

Table No. 4.18

Banks	No. of case listed	Constant A	Regression Coefficient			R <sub>2</sub>	S.E.	F	Sig F
			b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>				
SCB	5	64001.15	-323.46 (266.04) [-1.216]	449.002 (393.31) [1.142]	-835.62 (614.64) [-1.360]	.891	1457.71	2.713	.413

HBL	5	-5123.067	122.812 (86.556) [1.419]	-158.294 (291.41) [-0.543]	77.270 (159.255) [0.485]	.850	396.754	1.892	.480
NABIL	5	174293.5	-1447.96 (841.98) [-1.95]	2167.774 (1056.52) [2.052]	-2574.69 (1182.54) [-2.177]	.911	1201.19	3.407	.374
EBL	5	-3703.65	85.083 (13.233) [6.429]	-116.336 (53.536) [-2.173]	65.336 (29.59) [2.208]	.995	141.423	73.262	.086

Note: Values in ( ) and [ ] represents standard errors of coefficient value and T values.

The above table shows regression equation of dividend per share on earning per share, dividend per share and dividend payout ratio. In case of SCB, the regression coefficient for EPS and DPR are negative i.e. -312.46 and -835.62 which indicates that one rupee increase in EPS and DPR leads to Rs.323.46 and Rs.835.62 decrease in MPS. The regression coefficient of DPS is 449.002 which show that there is positive relationship between MPS and DPS since increase in DPS cause increase in MPS.

The value of multiple coefficient of determination is 0.891 which shows 89.1 percent variation in MPS explained by variations in EPS, DPS and DPR. In case of HBL, the regression coefficient for EPS and DPR are positive. i.e. 122.812 and 77.270. This situation indicates that the relationship between MPS and EPS is positive since that one rupee increase in EPS and DPR lead about Rs.122.812 and 77.27 increases in MPS. The regression coefficient of DPS is -158.294 which indicate one rupee increase in DPS causes Rs.158.294 decrease in MPS. The value of multiple coefficient of determination is 0.850 which shows 85 percent variation in MPS explained by variations in EPS, DPS and DPR.

In case of NABIL, the regression coefficient of EPS and DPR are negative. i.e. -1447.96 and -2574.69 respectively. This situation indicates that EPS and DPR have negative relationship with MPS. Thus, one rupee increase in EPS and DPR leads to Rs.1447.96 and 2574.69 decrease in MPS respectively. The regression coefficient of DPS is 2167.774. This situation indicates that the relationship between MPS and DPS is positive since one rupee increase in DPS causes Rs.2167.774 increase in MPS. The value of multiple coefficient of determination is 0.911 which shows 91.1 percent variation in MPS explained by variations in EPS, DPS and DPR.

In case of EBL, the regression coefficient of EPS and DPR are positive i.e. 70.675 and 39.002 respectively. Thus, MPS has positive relationship with EPS and DPR respectively. One rupee increase in EPS leads to Rs.70.675 increase in MPS. Similarly, one rupee increase in DPR leads about Rs.39.002 increase in MPS. The regression coefficient of DPS is negative i.e. -116.336 respectively. This situation indicates that DPS has negative relationship with MPS. Thus, one rupee increase in DPS leads to Rs.116.336 decrease in MPS. The value of multiple coefficient of determination is 1.00 which shows 100 percent variation in MPS explained by variations in EPS, DPS and DPR.

SCB and NABIL have relatively high S.E of coefficients but HBL and EBL has low S.E of coefficients.

F- Statistics for the regression shows only in case of EBL, the computed value of F is greater than its table value at 1% level of significant. It indicates that regression equation provide a statistically significant explanation of variation in DPS of these banks. Whereas in case of SCB, NABIL and HBL F- Statistics are lower than critical value. It indicates that the regression equation do not provide a statistically significant explanation of variation in dividend per share of these two banks.

## 4.5 Test of Hypothesis

### First Hypothesis Test

Null Hypothesis ( $H_0$ ):  $\mu_1 = \mu_2 = \mu_3 = \mu_4$

i.e. There is no significant difference in DPS of SCB, HBL, NABIL and EBL.

Alternative Hypothesis ( $H_1$ ):  $\mu_1 \neq \mu_2 = \mu_3 = \mu_4$

i.e. There is significant difference in DPS of SCB, HBL, NABIL and EBL.

Computation of 'F' test Statistics

Grand Total (T) = 1056.56

Correction Factor (C.F.) = 55818.06

Total Sum of Square (SST) = 33741.03

Sum of Square due to Row or between Banks (SSC) = 29597.99

Sum of Square due to Error or within Banks (SSE) = 4143.037

### Analysis of Variance Table (ANOVA)

S.No	Source of Variation	Sum of Squares (S.S)	Degree of Freedom(d.f.)	Mean Square (M.S.)	Calculated 'F'
1	Between Banks (Due to Row)	SSC = 29597.99	(4 - 1) = 3	9866	38.10
2	With in Banks (Due to Error)	SSE = 4143.037	(19 - 3) = 16	258.94	
3	Total	37360.63	(20-1) = 19		

Critical value for d.f's  $v_1 = 3$  and  $v_2 = 16$   $F_{0.05} = 3.68$

Decision: Since computed value of f is greater than the table value at 5% level of significance,  $H_1$  accepted i.e. there is significant difference in DPS of SCB, HBL, NABIL and EBL.

### Second Hypothesis Test

Null Hypothesis ( $H_0$ ):  $\mu_1 = \mu_2 = \mu_3 = \mu_4$

i.e. There is no significant difference in EPS of SCB, HBL, NABIL and EBL.

Alternative Hypothesis ( $H_1$ ):  $\mu_1 = \mu_2 = \mu_3 = \mu_4$

i.e. There is significant difference in EPS of SCB, HBL, NABIL and EBL.

Computation of 'F' test Statistics

Grand Total (T) = 1943.34

Correction Factor (C.F.) = 188828.52

Total Sum of Square (SST) = 34337.79

Sum of Square due to Row or between Banks (SSC) = 30154.88

Sum of Square due to Error or within Banks (SSE) = 2830

### Analysis of Variance Table (ANOVA)

S.No	Source of Variation	Sum of Squares (S.S)	Degree of Freedom(d.f.)	Mean Square (M.S.)	Calculated 'F'
1	Between Banks (Due to Row)	SSC = 30154.88	(4 - 1) = 3	10051.63	38.45
2	Within Banks (Due to Error)	SSE = 4182.91	(19 - 3) = 16	261.43	
3	Total	34337.79	(20-1) = 19		

Critical value for d.f's  $v_1 = 3$  and  $v_2 = 16$   $F_{0.05} = 3.68$

Decision: since computed value of f is greater than the table value at 5% level of significance,  $H_1$  accepted i.e. there is significant difference in EPS of SCB, HBL, NABIL and EBL.

### Third Hypothesis Test

Null Hypothesis ( $H_0$ ):  $\mu_1 = \mu_2 = \mu_3 = \mu_4$

i.e. There is no significant difference in DPR of SCB, HBL, NABIL and EBL.

Alternative Hypothesis ( $H_1$ ):  $\mu_1 = \mu_2 = \mu_3 = \mu_4$

i.e. There is significant difference in DPR of SCB, HBL, NABIL and EBL.

Computation of 'F' test Statistics

Grand Total (T) = 931.11

Correction Factor (C.F.) = 43348.29

Total Sum of Square (SST) = 12521.10

Sum of Square due to Row or between Banks (SSC) = 8708.68

Sum of Square due to Error or within Banks (SSE) = 3812.42

Analysis of Variance Table (ANOVA)

S.No	Source of Variation	Sum of Squares (S.S)	Degree of Freedom(d.f.)	Mean Square (M.S.)	Calculated 'F'
1	Between Banks (Due to Row)	SSC = 8708.68	(4 -1) = 3	2902.89	12.18
2	Within Banks (Due to Error)	SSE = 3812.42	(19 - 3) = 16	238.28	
3	Total	12521.1	(20-1) = 19		

Critical value for d.f's  $v_1 = 3$  and  $v_2 = 16$   $F_{0.05} = 3.68$

Decision: since computed value of f is greater than the table value at 5% level of significance,  $H_1$  accepted i.e. there is significant difference in DPS of SCB, HBL, NABIL and EBL.

## 4.6 Major Findings

The major findings obtained from the above data analysis are stated as follows.

1. SCB has the highest average dividend per share among other banks. EBL has lowest DPS. While looking at the CV of the banks HBL has the highest CV which indicates relative dispersion is also the highest than other banks. Whereas, NABIL has the lowest CV. The study shows that both HBL and EBL do not have stable and consistent dividend payment practice.
2. In case of DPR, SCB has the highest average DPR among other banks. NABIL comes in second position. EBL has the lowest average DPR and also it has the highest fluctuation indicated by its CV of 69.53 percent. NABIL has the lowest fluctuation in DPR. The fluctuation of the DPR of the banks ranged from 9.03 percent to 69.53 percent.
3. NABIL has the highest average dividend yield. HBL has lowest average DY and EBL has highest fluctuation in DY as indicated by its CV of 92.6 percent. NABIL has lowest CV of 52.86 percent. But, HBL has CV of 72.28 percent which indicates that it also has high fluctuation in Dividend Yield.
4. SCB has the highest average EPS of Rs.152.36 followed by NABIL, EBL, and HBL being the lowest. The highest fluctuation in EPS is 24.58 percent of EBL as indicated by its CV. SCB has the lowest fluctuation in EPS as measured by CV of 10.81 percent.

5. The average highest MPS is of SCB with Rs.4119. HBL has lowest MPS of Rs.1316. The highest fluctuation in share price is 59.70 percent of NABIL. The HBL has the lowest fluctuation in share price as measured by its CV of 34.83 percent.
6. NABIL and EBL have the highest average earning yield. And SCB come in second position followed by HBL. SCB has the highest fluctuation in EY as indicated by its CV. Whereas HBL has lowest fluctuation in EY.
7. SCB has highest average P/E Ratio. And HCB has the lowest P/E Ratio. The CV analysis shows that NABIL has highest fluctuation in P/E Ratio followed by SCB, EBL and HBL.
8. The DPS and EPS of all the banks are positively correlated which means higher the EPS, higher will be the DPS. The regression analysis of all the four banks SCB, EBL, HBL and NABIL shows that increase in EPS causes to increase in DPS.
9. The correlation between EPS and MPS of all the banks are positively correlated which means higher the MPS higher will be the EPS. The regression analysis of HBL and EBL shows that increase in EPS causes to increase in MPS. However, the regression analysis of SCB and NABIL shows that increase in EPS causes to decrease in MPS.
10. The correlation between MPS and DY of SCB and HBL are positively correlated which means higher the DY higher will be the MPS. The correlation between EBL and NABIL is negatively correlated which means higher the DY lower will be MPS.
11. The MPS and DPS of HBL, NABIL and EBL are positively correlated which means higher the DPS higher will be the MPS. The MPS and DPS of SCB is negatively correlated which means higher the DPS lower will be MPs.
12. The correlation between MPS and DPR of HBL is positively correlated which means higher the DPR, higher will be the MPS. The correlation between MPS and DPR of rest of the banks SCB, NABIL and EBL is negatively correlated which means higher the DPR, lower will be the MPS.
13. The multiple regression analysis of SCB shows that the relationship between MPS with DPS is positive i.e. increase in DPS causes to increase in MPS. At the same time, there is negative relationship between MPS, EPS and DPR which shows increase in EPS and DPR leads to decrease in MPS. In case of HBL, the regression analysis shows that the relationship of MPS with DPS is negative i.e. increase in DPS and DPR causes to decrease in MPS which is ridiculous. At the same time it also shows that increase in EPS and DPR causes to increase in MPS. This shows there is positive relationship. Whereas in case of NABIL, its regression analysis shows that there is positive relationship of MPS with DPS. It means increase in DPS causes to increase in MPS. But it also shows that decrease in EPS and DPR leads to increase in MPS which does not happen practically. In case of EBL, its regression analysis shows that there is negative relationship of MPS with DPS which means that increase in EPS lead to decrease in MPS, which is ridiculous. At the same time, it shows that there is positive relationship between MPS with EPS and DRP which shows increase in EPS and DPR leads to increase in MPS.
14. The test of hypothesis of F-test statistic between SCB, HBL, NABIL and EBL shows that there is a significant difference between DPS of the banks at 5% level of significance.

15. The test of hypothesis of F-test statistic between SCB, HBL, NABIL and EBL shows that there is a significant difference between EPS of the banks at 5% level of significance.
16. The test of hypothesis of F-test statistic between SCB, HBL, NABIL and EBL shows that there is a significant difference between EPS of the banks at 5% level of significance.

## CHAPTER V

### CONCLUSION AND RECOMENDATION

#### **5.1 Summary**

Dividend policy decision is one of the major decisions of financial management. The dividend policy decision affects on the operation and prosperity of the organization because it has the power to influence other two decisions of the organization i.e. capital structure decision and investment decision. An investor expects two return namely capital gain and dividend by investing in equity capital or ordinary share. So, payment of dividend to shareholders is an effective way to attract new investors and maintain present investors. Besides this dividend paying ability also reflects the financial positions of the organization in the market.

Dividend distribution is very important factor to any organization for effective goal achievement to satisfy the shareholders. Dividends are payments made to the shareholders in return to their investment in the shares of the firm. In other words, dividend can be known as the portion of profit distributed to shareholders. And policy refers to the decision about how much earning, at what form should be distributed to the shareholder's. Thus, dividend policy is to determine the amount of earning to be distributed to shareholders and the amount to be retained or reinvested in the firm.

Dividend serves as simple, comprehensive signal of management's interpretations of the firm's recent performance and its future prospects. The main objective of the study is to see the relationship of dividend per share, earning per share, dividend payout ratio, dividend yield and market price per share.

This paper attempts to determine the impact of dividend policy on stock price. A sample of four commercial banks listed in Nepal Stock Exchange is examined for a period of 2003/04 to 2007/08. To make the research move reliable, different types of analysis have been conducted to find out the appropriate relationship between market price of common share and other variables, which affect the dividend.

#### **5.2 Conclusions**

- 5.2.1 The rules and regulations that bind the companies to pay dividend is lacking. There is no provision in Company Act 2063 and other regulating acts regarding dividend payment. This has caused inconsistency and random walk of dividend payment which is seen in case HBL and EBL.
- 5.2.2 Out of four banks taken under this study, only SCB and NABIL have paid dividend regularly and consistently whereas HBL and EBL have not paid dividend regularly.
- 5.2.3 There seems instability and inconsistency in dividend payment. Dividend payout ratio of HBL and EBL do not show any stability in dividend payments. So, this situation indicates that HBL and EBL do not have strategic dividend policy.
- 5.2.4 The average DPR of the banks has ranged from 23.64 to 68.57 percent. EBL faces greatest fluctuation in DPR among other banks with 69.53 percent and HBL with 61.34 percent which clearly indicates instability in dividend payout

ratio. NABIL shows lower fluctuation in DPR. SCB shows higher fluctuation than NABIL but very lower than HBL and EBL.

- 5.2.5 EBL faces greatest fluctuation in EPS as measured by its CV which is higher than other banks i.e.24.58%. This sort of fluctuation causes loosing public faith in the market. Whereas SCB has lower fluctuation in EPS. At the same time, HBL and NABIL come in second and third position. Also, HBL has the lowest fluctuation in MPS whereas NABIL comes in last position and SCB and EBL come in second and third position.
- 5.2.6 The analysis of DPS shows that SCB is following constant dividend payout policy for last two years. However, HBL, NABIL and EBL are not following the constant dividend payout policy. The dividend payment trends of these banks are highly fluctuating.

It is found that only a few company that pay dividend to the shareholders but there is no consistency in dividend distribution in all the sample banks. HBL and EBL have not distributed any cash dividend in the fiscal year 2003/04 and 2004/05 respectively. SCB pays the high cash dividend among the sample banks. The research shows that none of the sample banks have well defined and appropriate policy regarding dividend payment. They don't seem to follow the optimum dividend policy of paying regular dividend as per the shareholder's expectation. It might cause uncertainty among shareholders.

### **5.3 Recommendations**

- 5.3.1 The analysis shows that clearly defined dividend policy among sample companies and none of the sample companies have followed a relevant and appropriate dividend policy except SCB and NABIL. The DPS of other sample companies are highly fluctuating. SCB and NABIL are following constant dividend payment policy. However, other companies are neither following fixed dividend policy nor constant payout dividend policy. This sort of fluctuation in dividend payment may create uncertainty among stockholders. So, it is recommended that the banks should maintain constant dividend payout policy to satisfy stockholders and also to build good image in stock market.
- 5.3.2 The analysis shows that SCB and EBL have insignificant relationship between EPS and DPS which indicates that EPS is not taken in account for declaration of dividend. So, it is very important for these above mentioned banks to consider earnings rather than neglecting it while making dividend decision.
- 5.3.3 The analysis of dividend payout ratio of EBL shows that it has the highest fluctuation in dividend payout ratio. This sort of imbalance causes serious inconvenience and uncertainty among shareholders as well as many other sectors of the company. So, it is recommended that EBL should follow constant dividend payout ratio policy.
- 5.3.4 There is lack of rules and regulations which binds the companies listed in stock exchange including four banks taken under study. The legal rules regarding to the dividend policy should be clear for smooth growth of the enterprises as well as growth of national economy. For this purpose, GON, NEPSE, SEBON and other concerned parties should enact legal rule that bind the listed companies to pay dividend regularly.

- 5.3.5 Banks should have long term vision regarding earnings and dividend per share which helps them to cope with challenging competitive situation of present world. They should define their vision clearly considering their future plans, expansion in business, future economy of the country. Considering various internal and external factors, companies should choose whether to adopt stable dividend policy, constant payout ratio or low regular plus extras or adopting dividend as residual dividend policy.
- 5.3.6 There seems a necessity to establish an organization that carries out activities to promote and protect shareholders/investors interest. The Government should recognize that kind of organization. The activities of Nepal Stock Exchange Ltd and Security Board of Nepal should be made wide and these organizations should be revitalized equipping them with competent manpower and other physical facilities.
- 5.3.7 Banks are playing on the public money. So in this regard, they are advised to have target rate of return (earnings) and target payout ratio that will help the banks to build good image in stock market and investors will be benefited on making investment decision.
- 5.3.8 Banks should have their clearly defined dividend policy. Clearly defined policy helps to determine specific policy regarding stable dividend, constant payout ratio and low regular plus extras. This sort of policy helps the investors to decide whether to buy or not the share of the particular bank. Banks can clearly define their dividend policy discussing in AGM among shareholders in democratic manner.
- 5.3.9 The decision regarding dividend payment should not be biased and it should always in favour of the prosperity and betterment of the company.

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## Appendix 1

### Standard Chartered Bank Nepal Limited (SCB)

#### Simple Correlation and Regression Analysis between EPS and MPS

Year	EPS (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	143.55	1745	250494.75	20606.603	3045025
2004/05	143.14	2345	335663.3	20489.06	5499025
2005/06	175.84	3775	663796	30919.706	14250625
2006/07	167.37	5900	987483	28012.717	34810000
2007/08	131.92	6830	901013.6	17402.886	46648900
N=5	X = 761.82	Y =20595	XY =3138450.65	X <sup>2</sup> =117430.97	Y <sup>2</sup> = 104253575

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.003$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.4472$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.3016$$

Independent Variable (X): EPS

Dependent Variable (Y): MPS

Regression Equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 0.379$$

$$a = Y - bX = 4061.28$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 2544.44$$

## Simple Correlation and Regression Analysis between EPS and DPS

Year	EPS (X)	DPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	143.55	110	15790.5	20606.603	12100
2004/05	143.14	120	17176.8	20489.06	14400
2005/06	175.84	130	22859.2	30919.706	16900
2006/07	167.37	80	13389.6	28012.717	6400
2007/08	131.92	80	10553.6	17402.886	6400
N=5	X =761.82	Y = 520	XY = 79769.7	X <sup>2</sup> = 117430.97	Y <sup>2</sup> = 56200

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.319$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.102$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.4016$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.2709$$

Independent Variable (X): EPS

Dependent Variable (Y): DPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 0.392$$

$$a = Y - bX = 43.323$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 25.198$$

### Simple Correlation and Regression Analysis between DPS and MPS

Year	DPS (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	110	1745	191950	12100	3045025
2004/05	120	2345	281400	14400	5499025
2005/06	130	3775	490750	16900	14250625
2006/07	80	5900	472000	6400	34810000
2007/08	80	6830	546400	6400	46648900
N=5	X = 520	Y = 20595	XY = 1982500	X <sup>2</sup> = 56200	Y <sup>2</sup> = 104253575

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.785$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.617$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.1713$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.1155$$

Independent Variable (X): DPS

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = -75.179$$

$$a = Y - bX = 11937.64$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 1574.876$$

### Simple Correlation and Regression Analysis between DPR and MPS

Year	DPR (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	76.63	1745	133719.35	5872.157	3045025
2004/05	83.83	2345	196581.35	7027.469	5499025
2005/06	73.93	3775	279085.75	5465.645	14250625
2006/07	47.8	5900	282020	2284.84	34810000
2007/08	60.64	6830	414171.2	3677.21	46648900
N=5	X = 342.83	Y = 20595	XY = 1305577.65	X <sup>2</sup> = 24327.32	Y <sup>2</sup> = 104253575

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.844$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.712$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1 - r^2}{\sqrt{n}} = 0.1288$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1 - r^2}{\sqrt{n}} = 0.0868$$

Independent Variable (X): DPR

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = -129.793$$

$$a = Y - bX = 13018.389$$

$$\text{Standard error of Estimate (SE}_e) = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n-2}} = 1365.618$$

### Simple Correlation and Regression Analysis between DY and MPS

Year	DY (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	6.3	1745	10993.5	39.69	3045025
2004/05	5.1	2345	11959.5	26.01	5499025
2005/06	3.44	3775	12986	11.8336	14250625
2006/07	1.36	5900	8024	1.8496	34810000
2007/08	1.17	6830	7991.1	1.3689	46648900
N=5	X = 17.37	Y = 20595	XY = 51954.1	X <sup>2</sup> = 51954.1	Y <sup>2</sup> = 104253575

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.984$$

$$\text{Coefficient of Determination (r}^2) = .968$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.1431$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.0965$$

Independent Variable (X): DY

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = -960.027$$

$$a = \bar{Y} - b\bar{X} = 7454.135$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 452.04$$

## Appendix 2

### Himalayan Bank Limited (HBL)

#### Simple Correlation and Regression Analysis between EPS and MPS

Year	EPS (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	49.05	840	41202	2405.90	705600
2004/05	47.91	920	44077.2	2295.37	846400
2005/06	59.24	1100	65164	3509.38	1210000
2006/07	60.66	1740	105548	3679.64	3027600
2007/08	62.74	1980	124225	3936.31	3920400
N=5	X = 279.6	Y = 6580	XY = 380217	X <sup>2</sup> = 15826.59	Y <sup>2</sup> = 9710000

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.865$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.748$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.1127$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.0760$$

Independent Variable (X): EPS

Dependent Variable (Y): MPS

Regression Equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X^2 - (\sum X)^2} = 64.085$$

$$a = Y - bX = -2267.614$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 297.1179$$

### Simple Correlation and Regression Analysis between EPS and DPS

Year	EPS (X)	DPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	49.05	0	0	2405.90	0
2004/05	47.91	11.58	554.798	2295.37	134.10
2005/06	59.24	30	1777.2	3509.38	900
2006/07	60.66	15	909.9	3679.64	225
2007/08	62.74	25	1568.5	3936.31	625
N=5	X = 279.6	Y = 81.58	XY = 4810.4	X <sup>2</sup> = 15826.6	Y <sup>2</sup> = 1884.1

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.764$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.583$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.1865$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.1258$$

Independent Variable (X): EPS

Dependent Variable (Y): DPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 1.298$$

$$a = Y - bX = -56.286$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 8.7651$$

### Simple Correlation and Regression Analysis between DPS and MPS

Year	DPS (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	0	840	0	0	705600
2004/05	11.58	920	10653.6	134.10	846400
2005/06	30	1100	33000	900.00	1210000
2006/07	15	1740	26100	225.00	3027600
2007/08	25	1980	49500	625.00	3920400
N=5	X = 81.58	Y = 6580	XY = 119254	X <sup>2</sup> = 1884.10	Y <sup>2</sup> = 9710000

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.493$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.243$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.3385$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.2283$$

Independent Variable (X): DPS

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 21.507$$

$$a = Y - bX = 965.087$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 514.751$$

### Simple Correlation and Regression Analysis between DPR and MPS

Year	DPR (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	0	840	0	0	705600
2004/05	11.58	920	10653.6	134.10	846400
2005/06	30	1100	33000	900.00	1210000
2006/07	15	1740	26100	225.00	3027600
2007/08	25	1980	49500	625.00	3920400
N=5	X = 81.58	Y = 6580	XY = 119254	X <sup>2</sup> = 1884.10	Y <sup>2</sup> = 9710000

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.419$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.176$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.3685$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \quad \frac{1-r^2}{\sqrt{n}} = 0.2485$$

Independent Variable (X): DPR

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 11.24$$

$$a = Y - bX = 1002.645$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 537.268$$

### Simple Correlation and Regression Analysis between DY and MPS

Year	DY (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	0	840	0	0	705600
2004/05	1.26	920	1159.2	1.588	846400
2005/06	2.73	1100	3003	7.453	1210000
2006/07	0.86	1740	1496.4	0.740	3027600
2007/08	1.26	1980	2494.8	1.588	3920400
N=5	X = 6.11	Y = 6580	XY = 8153.4	X <sup>2</sup> = 11.368	Y <sup>2</sup> = 9710000

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.056$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.003$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.4459$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.3007$$

Independent Variable (X): DY

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 28.873$$

$$a = Y - bX = 1280.718$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 590.894$$

### Appendix 3

#### Nabil Bank Limited (NABIL)

Simple Correlation and Regression Analysis between EPS and MPS

Year	EPS (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	92.61	1000	92610	8576.61	1000000
2004/05	105.49	1505	158762.45	11128.14	2265025
2005/06	129.21	2240	289430.4	16695.22	5017600
2006/07	137.08	5050	692254	18790.93	25502500
2007/08	108.31	5275	571335.25	11731.06	27825625
N=5	X = 572.7	Y = 15070	XY = 1804392.1	X <sup>2</sup> = 66921.96	Y <sup>2</sup> = 61610750

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.534$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.286$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.3193$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.2154$$

Independent Variable (X): EPS

Dependent Variable (Y): MPS

Regression Equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 59.079$$

$$a = Y - bX = -3752.951$$

$$\text{Standard error of Estimate (SE}_e) = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n-2}} = 1963.45$$

Simple Correlation and Regression Analysis between EPS and DPS

Year	EPS (X)	DPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	92.61	20	1852.2	8576.61	400
2004/05	105.49	0	0	11128.14	0
2005/06	129.21	25	3230.25	16695.22	625
2006/07	137.08	10	1370.8	18790.93	100
2007/08	108.31	20	2166.2	11731.06	400
N=5	X = 572.7	Y = 75	XY = 8619.45	X <sup>2</sup> = 66921.96	Y <sup>2</sup> = 1525

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.897$$

$$\text{Coefficient of Determination (r}^2) = 0.805$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.0872$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.0588$$

Independent Variable (X): EPS

Dependent Variable (Y): DPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 0.806$$

$$a = Y - bX = -16.348$$

$$\text{Standard error of Estimate (SE}_e) = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n-2}} = 8.342$$

### Simple Correlation and Regression Analysis between DPS and MPS

Year	DPS (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	20	1000	20000	400	1000000
2004/05	0	1505	0	0	2265025
2005/06	25	2240	56000	625	5017600
2006/07	10	5050	50500	100	25502500
2007/08	20	5275	105500	400	27825625
N=5	X = 75	Y = 15070	XY = 232000	X <sup>2</sup> = 1525	Y <sup>2</sup> = 61610750

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.281$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.079$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.4119$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \quad \frac{1-r^2}{\sqrt{n}} = 0.2778$$

Independent Variable (X): DPS

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 34.514$$

$$a = Y - bX = 390.94$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 2229.736$$

Simple Correlation and Regression Analysis between DPR and MPS

Year	DPR (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	70.19	1000	70190	4926.64	1000000
2004/05	66.36	1505	99871.8	4403.65	2265025
2005/06	65.78	2240	147347.2	4327.01	5017600
2006/07	72.95	5050	368397.5	5321.70	25502500
2007/08	55.4	5275	292235	3069.16	27825625
N=5	X = 330.68	Y = 15070	XY = 22048.16	X <sup>2</sup> = 22048.16	Y <sup>2</sup> = 61610750

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.347$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.120$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.3935$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.2654$$

Independent Variable (X): DPR

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = -104.473$$

$$a = Y - bX = 9923.446$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 2178.963$$

Simple Correlation and Regression Analysis between DY and MPS

Year	DY (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	6.5	1000	6500	42.25	1000000
2004/05	4.65	1505	6998.25	21.62	2265025

2005/06	3.79	2240	8489.6	14.36	5017600
2006/07	1.98	5050	9999	3.92	25502500
2007/08	1.14	5275	6013.5	1.30	27825625
N=5	X = 18.06	Y = 15070	XY = 38000.35	X <sup>2</sup> = 83.46	Y <sup>2</sup> = 61610750

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.957$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.915$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = 0.3801$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.2564$$

Independent Variable (X): DY

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = -901.701$$

$$a = Y - bX = 6270.944$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 676.407$$

## Appendix 4

### Everest Bank Limited (EBL)

#### Simple Correlation and Regression Analysis between EPS and MPS

Year	EPS (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	46.5	680	31620	2162.25	462400
2004/05	54.2	870	47154	2937.64	756900
2005/06	62.8	1379	86601.2	3943.84	1901641
2006/07	74.8	2430	181764	5595.04	5904900
2007/08	91.82	3132	287580.2	8430.912	9809424
N=5	X = 330.12	Y = 8491	XY = 634719.4	X <sup>2</sup> = 23069.68	Y <sup>2</sup> = 18835265

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.987$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.973$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = .01207$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1-r^2}{\sqrt{n}} = 0.0081$$

Independent Variable (X): EPS

Dependent Variable (Y): MPS

Regression Equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 57.288$$

$$a = Y - bX = -2073.87$$

$$\text{Standard error of Estimate (SE}_e) = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 198.13$$

Simple Correlation and Regression Analysis between EPS and DPS

Year	EPS (X)	DPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	46.5	20	930	2162.25	400
2004/05	54.2	0	0	2937.64	0
2005/06	62.8	25	1570	3943.84	625
2006/07	74.8	10	748	5595.04	100
2007/08	91.82	20	1836.4	8430.91	400
N=5	X = 330.12	Y = 75	XY = 5084.4	X <sup>2</sup> = 23069.68	Y <sup>2</sup> = 1525

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.177$$

$$\text{Coefficient of Determination (r}^2) = 0.031$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1 - r^2}{\sqrt{n}} = 0.4333$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \quad \frac{1 - r^2}{\sqrt{n}} = 0.2923$$

Independent Variable (X): EPS

Dependent Variable (Y): DPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n \cdot a + b \cdot X$$

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

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = 0.098$$

$$a = Y - bX = 8.56$$

$$\text{Standard error of Estimate (SE}_e) = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 11.36$$

### Simple Correlation and Regression Analysis between DPS and MPS

Year	DPS (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	20	680	13600	400	462400
2004/05	0	870	0	0	756900
2005/06	25	1379	34475	625	1901641
2006/07	10	2430	24300	100	5904900
2007/08	20	3132	62640	400	9809424
N=5	X = 75	Y = 8491	XY = 135015	X <sup>2</sup> = 1525	Y <sup>2</sup> = 18835265

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.182$$

$$\text{Coefficient of Determination (r}^2) = 0.033$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1 - r^2}{\sqrt{n}} = 0.4325$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \cdot \frac{1 - r^2}{\sqrt{n}} = 0.2917$$

Independent Variable (X): DPS

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n \cdot a + b \cdot X$$

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

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = -19.125$$

$$a = Y - bX = 1411.325$$

$$\text{Standard error of Estimate (SE}_e) = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 1192.97$$

Simple Correlation and Regression Analysis between DPR and MPS

Year	DPR (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	43.86	680	29824.8	1923.7	462400
2004/05	0	870	0	0	756900
2005/06	39.81	1379	54898	1584.84	1901641
2006/07	12.79	2430	31079.7	163.58	5904900
2007/08	21.78	3132	68215	474.37	9809424
N=5	X = 118.24	Y = 8491	XY = 184017	X <sup>2</sup> = 4146.49	Y <sup>2</sup> = 18835265

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.218$$

$$\text{Coefficient of Determination (r}^2) = 0.047$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1 - r^2}{\sqrt{n}} = 0.4262$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1 - r^2}{\sqrt{n}} = 0.2875$$

Independent Variable (X): DPR

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n \cdot a + b \cdot \sum X$$

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

Solving these two normal equations, we get

$$b = \frac{n \cdot \sum XY - \sum X \sum Y}{n \cdot \sum X - (\sum X)^2} = -12.435$$

$$a = Y - bX = 1992.19$$

$$\text{Standard error of Estimate (SE}_e\text{)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 1184.19$$

### Simple Correlation and Regression Analysis between DY and MPS

Year	DY (X)	MPS (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2003/04	2.94	680	1999.2	8.6436	462400
2004/05	0	870	0	0	756900
2005/06	1.81	1379	2495.99	3.2761	1901641
2006/07	0.41	2430	996.3	0.1681	5904900
2007/08	0.64	3132	2004.48	0.4096	9809424
N=5	X = 5.8	Y = 8491	XY = 7495.97	X <sup>2</sup> = 12.497	Y <sup>2</sup> = 18835265

$$\text{Coefficient of Correlation (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.466$$

$$\text{Coefficient of Determination (r}^2\text{)} = 0.217$$

$$\text{Standard error of Correlation Coefficient, S.E. (r)} = \frac{1 - r^2}{\sqrt{n}} = 0.3502$$

$$\text{Probable Error of Correlation Coefficient P.E. (r)} = 0.6745 \frac{1 - r^2}{\sqrt{n}} = 0.2362$$

Independent Variable (X): DY

Dependent Variable (Y): MPS

Regression equation of Y on X is,  $Y = a + bX$

Where,

a = Regression constant

b = Regression coefficient (Slope of the Regression Line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$Y = n.a + b. X$$

$$XY = a. X + b. X^2$$

Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X - (\sum X)^2} = -407.94$$

$$a = Y - bX = 2171.415$$

$$\text{Standard error of Estimate (SE}_e) = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 1073.27$$