

# **DIVIDEND POLICY AND ITS IMPACT**

**ON**

## **STOCK PRICE**

**A Thesis**

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## **VIVA –VOCE SHEET**

We have conducted the viva-voce examination of thesis

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**Poonam Libee**

Entitled

**"Dividend Policy and its impact on Stock Price"**

And found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for Master's Degree in Business Studies (M.B.S.)

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This is to certify that the thesis

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Has been approved by this department in the prescribed format of  
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## DECLARATION

I hereby declare that this thesis entitled "**Dividend Policy and its impact on Stock Price**" submitted to Nepal Commerce Campus, Minibhawan Faculty of Management, Tribhuvan University, is my original work. This work has been carried out for the partial fulfillment of the requirement for the Master of Business Studies (M.B.S) under the supervision of Dr. Sushil Mathema, Head of Research Department of Nepal Commerce Campus; Tribhuvan University.

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Finally, I am hopeful that this pain-staking task will serve as a stepping-stone to the students of business studies and to those who wish to make further researches under this topic.

**Poonam Libee**

Kathmandu, Nepal  
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## ABBREVIATION

a	-	Constant of regression
b	-	Regression coefficient
CDM	-	Central Department of Management
C.V.	-	Coefficient of Variation
d.f.	-	Degree of freedom
DPR	-	Dividend Payout Ratio
DPS	-	Dividend Per Share
DYR	-	Dividend Yield Ratio
EBL	-	Everest Bank Limited
EFR	-	Required External Fund
EPS	-	Earning Per Share
EYR	-	Earning Yield Ratio
Fig.	-	Figure
HBL	-	Himalayan Bank Limited
ibid	-	From the same work
i.e.	-	That is
Ltd.	-	Limited
MPS	-	Market Price per Share
NABIL	-	NABIL Bank Limited
NEPSE	-	Nepal Stock Exchange
NIBL	-	Nepal Investment Bank Limited
No.	-	Number
NRB	-	Nepal Rastra Bank
Op. cit.	-	In the work cited
%	-	Percentage
p	-	Page Number
P/E Ratio	-	Price Earning Ratio
PE	-	Probable Error
pp	-	From page no..... to no.....
pvt.	-	Private
r	-	Coefficient of correlation
R <sup>2</sup>	-	Coefficient of multiple determination
Rs.	-	Rupees
SCBL	-	Standard Chartered Bank Limited
S.D.	-	Standard Deviation
SEBON	-	Security Board of Nepal
S.E.E	-	Standard Error of Estimate
T.U.	-	Tribhuvan University
Vol.	-	Volume

# CHAPTER I

## INTRODUCTION

### 1.1. Background of the Study

Nepal is an undeveloped country having very low per capital income and corporate growth rate. The traditional concept of business and commerce is deep rooted in the people and most of them are unaware of modern form of business. But after the restoration of democracy in 1990 and universal echo of economic liberalization, Nepal has implemented liberal economic policy. As a result, many more companies are established in different sectors such as industrial, tourism, transportation, trade and mostly in the financial sector whose contribution in economy has great significance. Nepal is a country trying to develop its economy through global trend and of course with country suited economic liberalization. Development in the financial terms is the efficient flow and generation of the funds in the most productive sectors. The nations having effective fund collection from the nook and corners of the country and investing the in the productive areas are the economic heroes at the present scenario.

Among these circumstances, capital market and its extensivity also play great roles. Capital market generates and liquidates the security as per the requirements. But unfortunately, Nepalese capital market has no efficient communication network event today. It has made capital market less efficient and inefficiency result the risk. Even though, it is hope that Nepalese capital market will be moving towards efficiency in the days to come.

The history of securities market began with the share flotation of Biratnagar Jute mill limited and Nepal bank limited in 1937. Introduction of company act in 1951, the first issue of government bond 1964 and the establishment of securities exchange center ltd. In 1976 was other significant development in the field of the capital market<sup>1</sup>. Securities exchange center ltd was established with an objective of facilitating and promoting the growth of capital markets. Before conversion into stock exchange it was the only capital markets institutions undertaking the job of brokering, underwriting, managing public issues, market making for the government bonds and other financial services .

Banks generate the funds through different means. That is the reason the country having efficient and effective banking facilities is seemed to be successful at the 21st century. The establishments of banks are necessary either by the government or by private sectors. Both

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<sup>1</sup> Manoj Bhattarai, op.cit. p.2

have equal contribution for the generation as well as mobilization of the funds<sup>2</sup>. The contribution of private sectors is remarkable in economic development of a country.

When Nepal stock exchange limited (NEPSE) was established in 1993, the objective of this institution was to import free marketability and liquidity to the government and corporate securities by facilitating transactions in its only trading floor through market intermediaries i.e. brokers as well as market makers, Nepal stock exchange, insert NEPSE, is a non-profit organization, operating under securities exchange act, 1993 NEPSE opened its trading floor on 13 January 1994. Members of NEPSE are permitted to act as intermediaries in buying and selling of government bonds and listed corporate securities<sup>3</sup>. At present, there are 27 member brokers and market makers, who operate on the trading floor as per the securities exchange act 1983, rules and byelaws.

If a company has surplus cash it can buy back outstanding number of shares, which is known as repurchase of shares. In the developed capital market, corporations are allowed to buy shares back for better utilization of their unused cash. However, Nepalese company acts 1997, section 47 has prohibited company for purchasing its own shares. It states that no company shall purchase its own shares and supply loans against the securities of its own shares.

One of the major reasons, people invest their hard money on the shares of any company is for dividend. The amount, which is distributed as dividend should be adequate to meet the normal expectation of the shareholders. To these objectives, firms distribute the earnings to their shareholders. Earnings are that amount which remains after deducting or subtracting all operational and non-operational expenses. Stockholders' expectations may vary with their investment priorities, some participate in capital market in order to have some dividend as returned where as some hope for capital appreciation of stock. In fact, primary intention investing on stock is to earn dividend but in the Nepalese context people are interested in investing with the views and expectation of more capital appreciation of stocks. But there are not any consistency and regular practices of dividend announcement in different firms. Similarly in the secondary market the declaration of the dividend or the dividend policy of the firms changes the market price of the shares. Therefore, it is expected that there is some impact of dividend policy over the market price of the stock.

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<sup>2</sup> Manoj Bhattarai, op. cit., p.2

<sup>3</sup> [www.nepalstock.com](http://www.nepalstock.com)

## **Dividend Policy and Market Price of Stock (MPS)**

Dividend management is one of the most important aspects of a corporate financial management. Once a company makes a profit, it must decide on what to do with that profit, it must decide on what to do with those profits. There are two once a company has while utilizing its profit earned after tax, either distribute the profit to the shareholders or plough back the same by retaining it with the company. But in practice, companies do not go for the extreme options stated above i.e. they neither retains the whole of the profit earned with the company nor pay the whole profit fully to its shareholders but distributed a certain portion of the profit as dividend. Hence the company faces a problem of choosing an appropriate dividend policy as to what portion of earning to pay out as dividends once the company decides to pay dividends. They may establish a permanent dividend policy, which may in turn impact on investors and perceptions of the company in the financial market. What they decide depends on the situation of the company now and in the future. The profit made by the company which is distributed to the shareholders is termed as dividend. In one way it is the cost of sacrificing hard money investment. The decision earning or pay some portion of earning of earnings as dividend is known as dividend policy. Market price of the stock is the trading price of the stock listed in authorize or legal stock exchange. In the context of Nepal, MPS is the price that is quoted for purchasing or selling under Nepal stock exchange act or related laws and regulation on the stock exchange floor.

MPS is that value of stock, which can be obtained by a firm from the market. Market value of a share is one of the variables, which is affected by the dividend per share and earnings per share of the firm. The earnings per share and dividend per share is high, the market value per share will also be high. Market values of the shares may be high or low than the book values. If the firm's earning capacity is lower than the cost of capital, MPS will be lower. MPS is determined by capital market.

Dividend policy and MPS has always correlation. The company pays high dividend then MPS increases or vice-versa. But in some cases out of this interrelation, the price may remain constant or decrease too.

### **1.2 Statement of the Problem**

The dividend signaling hypothesis is a recurring topic on the literature of finance. Since the emergence of MM's classical work (Miller and Modigliani) it has received much attention. According to MM dividend policy is irrelevant to the value of the firm because dividend does not change a firm's underlying investment policy and cash flow. The model believes that the Earnings should be retained only for the purpose of reinvestment opportunity whereas other financial experts have their own views towards dividend payment.

In the context of Nepal different companies have adopted different policies and dividends are paid in an ad-hoc trend. Only few companies are generating profit and they are focusing their attention towards the reinvestment, hence there is no any rational rule for dividend payment. Nepalese capital market is just in the way to development, but investors are running after news companies without having the perspective analysis of these companies. Stock price increase in relation with the announcement of dividend although the firm announcing dividend might be of undercapitalized.

In Nepal there are more than hundred companies and enterprises listed in stock exchange limited. These companies are not seen regarding dividend decision. Even the profit generating companies do not have any consistent and clear-cut policy on dividend distribution.

Though many researchers have been made earliest in this concerns no sufficient studies have been carried out so as to see the impact of dividend policy on the market price of stock. Therefore the main focus of this study is to deal with the following problems so far it will be possible to cope with.

- ) Although dividend policy is one of the major decisions to be taken by firm but it is not well-known subject or a matter of practice by large numbers of financial community even today.
- ) The company manager and promoter seem to be conservative in dividend decision. They do not have positive attitude towards to the dividend payment to the stock holder despite the dividend.
- ) Nepalese companies do not have consistent and clear cut policy on dividend distribution though the level of dividends informs investors about the company performance and expected earnings.
- ) The problem of relevancy of dividends decision to affect the market price of shares.

- ) The problem of ignorance is the possibility of increasing the market price of stock by changing dividend payout ratio.
- ) Nepalese commercial banks have not been able to partly responsible on the dividend decision. Similarly, Nepalese shareholders also seem not so aware enough to maximize their wealth. Lack of enough knowledge people are investing hit or miss in share and the stock brokers are exploiting by the advantage of market imperfection.

Thus this study is directed towards resolving the following research questions in the context of Nepal:

1. What is the impact of dividend policy on the market price of the stock?
2. Is there any consistency in EPS, DPS, MPS, and DPR of sample banks?
3. What are the reasons behind stock price increasing after the announcement of dividend?
4. What are the prevailing dividend policy and practices of the sample banks?

### **1.3 Focus of the study**

In any firm, dividend policy is taken as major financial decisions that affect value of the firm. The main focus of this study is to examine the practice made by Nepalese joint venture commercial banks in regards to the dividend policy.

No investors would invest stock without having knowledge about the firm and its dividend policy. But in the Nepalese context; most of the investors are investing in the stock without the knowledge of the company's performance and policies. In same way, the study will also be focused on behavioral aspects of Nepalese investors but regards to dividend practice made in the past nine year by the sample firms.

### **1.4 Objectives of the Study**

Objectives are the desired outcomes. Without any fixed objectives there is no meaning of any type of study. So this study also has some objectives. The main objectives of study are to analyze the related variables affecting dividend policy and these are further divided into following sub objectives:

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

2. To study the prevailing practices and effort made in dividend policy in Nepalese Joints Venture Banks with the help of sample banks.
3. To access the relationship between the mps with other financial variables such as EPS, DPS, DPR, Retained earning per shares, P/E ratio, DYR, E/Y radio, etc.
4. To give workable suggestion on the basis of finding to the related bodies so that they can follow the better policy if the existing policy is not fruitful enough.

### **1.5 Significance of the Study**

Dividend policy decision is one of the most important decision as it is one of the crucial factor in every cooperate organization. This study is aimed at providing important information to the investor and respective firms taken as sample. Besides, this research will help the prospective investor to take rational decision for their investment. This study will also be useful for management to point out the loop holes and suggest the remedies regarding the dividend policy as well as for stock brokers, financial agencies, scholars, policy makers and other stock holders. Especially the significance of this study can be highlighted under following points:

1. The study will help the management and policy makers in setting and making a suitable divided policy.
2. This research work will provide vital information about the impact of dividend practices on market price of stock.
3. To raise public awareness about relationship of dividend policy and market price of stock in order to help them for rational decision of their investment.
4. This study will make suggestion and recommendation that will be helpful for further researchers, investors.

### **1.6 Limitation of the Study.**

This study is also not free from the limitation. There will be some limitation while making analysis such as shortage of time, reliability of statistical tools used and lack of research and experience. Basically these studies come with following limitation:

1. The study is best on the secondary data. So the relevancy of the study is affected by the reliability of secondary data collected correctness of analysis entirely depends on the truthfulness of the secondary data.
2. This study is simply the portion of requirement of MBS programme of the Tribhuvan University.
3. Only five banks are taken as sample for studies with only nine years period.
4. This study covers the data of only nine years.
5. The time frame and the budget for study.
6. People hesitate to provide unpublished data, which obstructs to reach at the up to date conclusion. Thus these couple of limitation may weaken the generalization.

### **1.7. Organization of the Study**

The study has been organized into five chapters each devoted to some aspect of reaction of stock price to dividend announcement. The chapters one to five consist of introduction, review of literature, research methodology, presenting and analysis of data and summary and conclusions. The content of each chapters of this study are briefly mention here:

#### ***Chapter I: Introduction***

This chapter deals with the introductory part of the study, which includes background of the study, statement of the problem focus of the study, objective of the study, significance of the study and limitation of the study.

#### ***Chapter II: Review of Literature***

This chapter deals with the review of the different literature in regard to the theoretical analysis and review of books, articles and thesis related to the study field. Therefore it includes conceptual frame work and other related studies.

#### ***Chapter III: Research Methodology***

This chapter deals with research methodology employed to carry out the research. It includes research design population and sample, source and technique of data collection, data analysis tools and limitation of methodology.



#### ***Chapter IV: Data Presentation and Analysis***

This chapter is the main part of the study, which deal with the empirical analysis of the study using various financial tools.

## ***Chapter V: Summary, Conclusions and Recommendations***

This chapter presents the major finding and compares them with the theory and other empirical evidence to possible extent. It also offers some recommendations.

Finally appendices contain list of bibliography, copies of different sheets having information required for the study, different basic calculations, tables, figures.

# CHAPTER II

## REVIEW OF LITERATURE

This chapter deals with the reviewing of different sources of dividend policy literature such as books, journals, research works and unpublished thesis. Similarly, this chapter includes two main headings like conceptual framework and review of related studies. Review of international and Nepalese context studies and related theory to the dividend and dividend policy will absolutely help to this research.

### A. CONCEPTUAL FRAMEWORK

#### 2.1 Earnings

Earning is the main objective of any business organization. It is the key factor for success of any organization. Earning is the basic strategy in the modern firm to sustain and expansion and to meet the expectation of the actual owner. Profit concept, therefore, occupies the main importance in the managerial decision making. Because of uncertainty in the business, entrepreneur hopes for earning, in other words, bearing of risk is compensated by means of earning.

#### 2.2 Dividend

Dividend is the periodic payment made to stockholders to compensate them for their wealth and investment funds. They can be in the form cash, stock or property. In fact, dividend is the portion of the net earnings, which is distributed to the shareholders of the company. After successfully completing the business activities of the company, if profit earned, the Board of Directors (BOD) decides to declare dividend to stockholders. Therefore, the payment of corporate dividend is at the discretion of the BOD. In Nepalese context, dividend paid is in annual basis.

The dividend policy adopted by a company affects the return to the shareholders. This is mainly due to the fact that dividend policy determines the amount of earnings to be distributed to shareholders and the amount to be retained for investment in the firm. There is a reciprocal relationship between retained earnings and cash dividend. If the firm increases its retained earnings, then, its cash dividend will decrease and vice versa<sup>4</sup>.

The main objective of establishment and operation of a company is to maximize the wealth position of shareholders. Thus dividend decision of the firm is one of the most crucial areas of financial management. The important aspect of dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained in the firm. Retained earnings are the most significant internal sources of financing in the growth of the firm. On the other hand, dividends may be considered desirable from shareholders point of view as they tend to increase their current return.

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<sup>4</sup> William H. Dean, "Finance" (Dryden Press: Library of Congress, 1973), p.1

What and how much it is desirable to pay dividend is always a controversial topics because shareholders expect higher dividend from corporation but corporation ensure towards setting aside funds for maximizing the overall shareholder's wealth. Therefore, management should develop such a dividend policy, which divides the net earnings into dividends and retained earnings in an optimum way to achieve the objective of maximizing the wealth of shareholders. The development of such policy will be greatly influenced by investment opportunities available to the firm and the value of dividends as against capital gains to the shareholders. "Financial management is therefore concerned with the activities of corporation that affect the well-being of stockholders. That well-being can be practically measured by the dividend received but a more accurate measure is market value of the stock". But the shareholders usually think that the dividend yield is less risky than capital gain<sup>5</sup>. Dividends are generally paid in cash. Therefore, it reduces the cash balances of the company. Dividend policy affects the financial structure, the flow of funds, corporate liquidity and investors' attitudes. Thus, it is one of the central decision area related to policies seeking to maximize the value of firm's common stock. There are two fundamental theories regarding to dividend.

- Residual Theory
- Wealth Maximization Theory

#### **(i) Residual Theory**

Residual theory is that, in which the first priority is given to the profitable investment opportunities. If there are profitable opportunities, the firm invests in those and residual income (if any) is distributed to the stockholders.

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<sup>5</sup> Eric. N. Berg, "Rethinking the meaning of dividends", (The New York Times, May 13, 1984), p.10

In the above figure, the shaded part shows the dividend paid after deducting the fund required for investment. When the earning does not meet the fund required for investment, the firm will bring Required External Fund (EFR).

As long as there are investment projects with higher returns, the firm retains the earnings to invest in such profitable projects rather than paying dividends. The firm grows at a faster rate when it accepts highly profitable investment projects. External equity could be raised to finance investments. But the retained earnings are preferable because unlike external equity, they do not involve any flotation cost. The distribution of cash dividend causes a reduction in internal funds available to finance profitable investment opportunities and thus, either constrains growth or requires the firm to find other costly sources of financing. Thus, earning may remain undistributed as a part of a long-term financing decision. The dividend paid to shareholders represents a distribution of earnings that cannot be profitably reinvested by the firm. With this approach, dividend decision is viewed merely as a residual decision<sup>6</sup>.

Residual theory of dividends means, "A theory that suggests that the dividend paid by the firm should be the amount left over after all acceptable investment opportunities have been under taken."<sup>7</sup> Using this approach the firm would treat the dividend decision in three steps as follows:

### ***Step I***

Determine the optimum level of capital expenditure which would be the level generated by the point of intersection of the investment opportunities schedule (IOS) and weighted managerial cost of capital (WMCC) function.

### ***Step II***

Using the optimal capital structure proportion, it would estimates the total amount of equity financing needed to support the expenditures generated in step I.

### ***Step III***

Because the cost of retained earnings,  $K_r$ , is less than the cost of new common stock,  $K_n$ , retained earnings would be used to meet the equity requirement determined in Step II. If retained earnings are inadequate to meet these needs, new common stock would be sold. If the available retain earnings are in excess to this needs, the surplus amount would be distributed as dividends.

## **(ii) Wealth Maximization Theory**

Under wealth maximization theory, larger dividend is announced and distributed to shareholders in order to maximize the wealth of stockholders. Basically it is applicable for those companies which are just established and/or whose financial profits are in decreasing

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<sup>6</sup> I.M. Pandey, "Financial Management" (Vikas Publishing House, 1995) p. 695

<sup>7</sup> Lawrence J. Gitman, "Principles of Managerial Finance", (New York: Harper and Raw Publishers Inc, 1988), p.616

trends. The main purpose of the wealth maximization theory of dividend is to make assurance to the stockholders that they are interested in the firm, which has not better market value.

## **2.3 Forms of Dividend**

Although most popular form of dividend is cash dividend, corporations need to follow different types of dividend in order to achieve their objective and policies.

According to changing needs of corporations, dividend is being distributed in several forms like cash dividend, stock dividend, scrip dividend and bond dividend. In context of Nepal, only cash dividend and stock dividend has been declared and paid and other form of dividend has not been practiced.

### **2.3.1 Cash Dividend**

Cash dividend is the dividend paid in cash from earnings of the company, which is distributed to the shareholders. It is very popular and widely used form of dividend all over the world. The cash account and the reserve account of company will be reduced when the cash dividend is paid. Thus both the total assets and net worth of the company are reduced by the equal amount which is distributed as cash dividend. Generally, the market stock price rises during declaration of cash dividend and falls after distribution of cash dividend. The firm has to maintain adequate cash balance for the payment of cash dividend. The volume of cash dividend depends upon earning of the firm and management policy.

### **2.3.2 Stock Dividend**

It is the dividend in which the firm issues additional shares of its own stock to stockholders in proportion to the number of the shares currently held, "A payment of additional shares to stockholders often used in place of or addition to cash dividend<sup>8</sup>". Stock dividend is popularly known by bonus shares. The combine payment of cash and stock dividend to the shareholders is frequently seen past (2-3) years in leading banks of Nepal like Standard Chartered Bank, NABIL Bank, Everest Bank, Nepal Investment Bank. This practice also can be observed in other banks of Nepal too.

The net effect of the stock dividend would be an increase in numbers of shares of current stockholders to represent the same interest as it was before using the stock dividend.

The effect of stock dividend can be outlined in following points:

- The issue of stock dividend increases the number of the outstanding shares.
- The issue of stock dividend transfer retained earnings to the share capital account.
- The net worth and the par value of the share do not change with the issue of stock dividend.

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<sup>8</sup> James C. Van Horne, "Financial Management & Policy", (New Delhi: Prentice Hall of India Pvt. Ltd., 2000), p.328.

- Stockholders proportional ownership remains unchanged.
- There is fall in per share earnings, book value and market price.

There is a growing practice of paying stock dividend among some Nepalese companies. The clue of stock dividend distributions may lie in their perceived substitution for relatively low cash dividends. In practice, it is observed that the immediately after the announcement of bonus issue, the market price of the company fluctuates depending on the investors' expectations. Sometimes a sharp decline in the share price may be observed if the bonus issue announced is less than investor's expectations. It is said that when the firm need to retain a high percentage of earnings, they issue stock dividends so that the shareholders of the firms are content. Managers strongly agree that stock dividends have a positive psychological impact on investors receiving them.

### **2.3.3 Scrip Dividend**

Scrip dividend means payment of dividend in scrip or promissory notes. Because of temporary cash shortage, sometimes the firm needs cash generated by business earnings to meet the different requirements. For those requisites, scrip dividend is issued promising the payment will be made in future. The scrip has the definite maturity date and may be of either interest bearing or not. But in financial practice it is relatively scare. Scrip dividend can be summarized as following:

- It is the replacement of the dividend for short period.
- Scrip dividend may be of either interest bearing or non interest bearing
- This type of dividend does not change the total numbers of shares but issued promissory note in the proportion of share held by the stockholders.
- Scrip dividend has relatively low psychological value in the stockholders' perception than other forms of the dividend<sup>9</sup>.

### **2.3.4 Bond Dividend**

Bond dividend by its name is a dividend that is distributed to shareholders in form of a bond. The main purpose of bond dividend is also the postponement of dividend payment for some time. The only difference between bond and scrip dividend is that bond carries relatively long maturity period than scrip dividend. In this type of dividend, company declares dividend in the form of its own bond with a view to avoid cash out flow. In this, company assumes the fixed obligation of interest payment annually and principal amount of bond at maturity date.

## **2.4 Stock Split**

A stock split is an increase in the number of shares outstanding through a proportional reduction in the par value of the stock<sup>10</sup>. Stock split does not affect the total rupee amount on

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<sup>9</sup> Manoj Bhattarai, op. cit., p.27

<sup>10</sup> J. Fred Weston, Thomas E. Copeland, "Managerial Finance", (New York: The Dryden Press, 1989), p.680.

either side of the balance sheet but it only tends to bring changes in the number of shares through a proportionate reduction in the par value of stock.

Stock split is closely related to stock dividend, but there is some difference. With a stock dividend, the par value is not reduced, where as with a split it is. As a result, the common stock, paid-in capital and retained earnings account remain unchanged. A stock split however is usually reversed for occasions when a company wishes to achieve a substantial reduction in the market price per share<sup>11</sup>.

The purpose of stock split is to make a firm's share price into an "optimal trading range". Especially investors of small means are presumably penalized by high stock prices that deny them the economies of buying stock in round lots. Thus, stock split is the popular practice of developed capital market to reduce the price of the shares in order to motivate more investors, particularly those with small savings, to purchase the shares, thus helps in increasing the marketability and liquidity of the company's share.

Although, stock split doesn't represent a thing of value to the investors, the stocks split may, however, have informational contents. The announcement of split may indicate the investor that management believes that earnings will continue to grow. As a result, the market price per stock may increase upon the announcement of the split or the rumor of an announcement, and remain higher.

## **2.5 Stock Repurchase**

It is the process of repurchasing back outstanding shares of any company. Stock repurchase often is used as part of an overall corporate restructuring. Sometime, stock repurchase is viewed as an alternative to pay dividends. If a firm has surplus cash, it may choose to buy back some of its own stock. It is instructive to see why share repurchase may be viewed as an alternative to pay dividends. By repurchasing stock, a company will reduce the number of shares outstanding. If the price earning ratio (P/E Ratio) does not change after the repurchase, the stock price must rise i.e., with stock repurchase, share value will increase, all other things remaining the same<sup>12</sup>. If a firm has excess cash and insufficient profitable investment opportunities to justify the use of these funds, it is in the share holder's interest to distribute the funds. The distribution can be accomplished either by the repurchase of stock or by paying high dividends.

Before the company repurchases stock, stockholders must be informed of the company's intentions. Otherwise, stockholders may sell their stock not knowing about a repurchase program that will increase EPS. Given full information about the amount of repurchase and the objective of the company the stockholders can sell their stock if they choose<sup>13</sup>.

With regard to Nepal Scenario, Nepalese company act 1997, section 47 has prohibited company for repurchasing its own shares. It states that no company shall purchase its own shares or supply loans against the security of its own shares.

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<sup>11</sup> James C. Van Horne, op. cit., p.328

<sup>12</sup> J. Fred Weston & T.E. Copeland, op. cit. pp. 682-683.

<sup>13</sup> Ibid, p.683



Stock is repurchased specially when the firm has abnormally high profits and is not in a position to effectively utilize surpluses. By repurchasing stocks, the remaining stockholders receive future benefits instead of current high dividend. The effects of repurchase on shares are as follows:

- i. The stock repurchase reduce the number of outstanding stocks.
- ii. It increases EPS and also DPS if the payout ratio is not changed.
- iii. It increases the proportional ownership of existing stockholders.
- iv. It increases the market stock price as net worth per share increases.

## **2.6 Dividend Policy**

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 group, but dividends constitute the cash flow that accrues to stockholders<sup>14</sup>.

The third major decision of the firm is its dividend policy, the percentage of earnings it pays in cash to its stockholders. Dividend payout reduces the amount of earnings retain in the firm and affects the total amount of internal financing<sup>15</sup>. Dividend policy refers to the issue of how much of the total profit a firm should pay to its stockholders and how much to retain for investment so that the combined present and future benefits maximize the wealth of stockholders. The dividend policy, however, not only specifies the amount of dividend, but also form of dividend, payment procedure etc.

In general, dividend policy is concerned with the following matters.

- Amount of dividend to be paid-the policy outlines the basis to determine the amount of dividend to be paid.
- Form of dividend-cash dividend and/or stock dividend.
- Payment procedure.
- Stock repurchase and stock split<sup>16</sup>.

Dividend policy can be categorized as following:

### **2.6.1 Stable Dividend Policy**

When a firm constantly pays a fix amount of dividend and maintains it for all times to come regardless of fluctuations in the level of its earnings, it is called a stable dividend policy. In this dividend policy, the dividend will be paid regularly. A consistent dividend policy is likely to enhance the share price by satisfying the firm's clientele and by providing consistently

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<sup>14</sup> Ibid, p.657

<sup>15</sup> James C. Van Horne, op. cit., p.305

<sup>16</sup> Surendra Pradhan, "Basics of Financial Management", (Kathmandu: Educational Enterprises Pvt. Ltd., 1992), p.376

positive signal about future earnings prospects<sup>17</sup>. This policy is applicable in the firm having regular and stable income. But this policy does not refer to fix income every year or periods. It can be changed proportionately with the change in companies' earnings. This policy has three forms:

**a. Stable Dividend per Share**

When a firm pays a fix amount of dividend per share over the year and does not change it with fluctuations in the level of its earnings, it is said to have persuade a relatively stable dividend policy. The most popular kind of dividend policy is one that pays a regular steady dividend<sup>18</sup>. This policy is completely rational policy and posses the strategic financial management. Therefore, it is related to the company's ability to pay dividends.

The dividend policy of paying a constant amount of dividend per year treats ordinary shareholders somewhat like preference shareholders without taking into account the firm's or shareholders' investment opportunities<sup>19</sup>. Those investors who have dividends as the only source of their income prefer the constant dividend policy. They are hardly concerned about the changes in share prices. In the long-run, such behaviour helps to stabilize the market price of the share<sup>20</sup>.

**b. Stable Payout Ratio**

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<sup>17</sup> Jerry A. Viscione & Gordon S. Roberts, "Contemporary Financial Management", (New Delhi: McMillan Publishing Company, 1987), p.377

<sup>18</sup> Robert W. Colb, "Financial Management", (London: Scott, Foreman & Company, 1987), p.419

<sup>19</sup> L.K. Brandt. 1972. Analysis of Financial Management, Prentice-Hall, p. 447

<sup>20</sup> Ibid,p.448

If the firm distribute a certain percentage of its earning as dividend in every year is known as stable payout ratio. The ratio of dividend to earning is called payout ratio. If the firm simply applied the target payout rate to each year earnings, dividend could fluctuate widely<sup>21</sup>.

### **c. Low Regular Plus Extra Policy**

If the company usually pays dividend constantly to stockholders at a fixed rate and do not change the payout ratio unless it is believed that the changes in earnings are permanent. When the earning of a firm is swelling, it may decided to distribute a part of increased earnings as extra dividend. It is known as low regular plus extra policy. Extra dividend is declared only in the year in which earnings exceed annual dividend requirement by some given amount and it will be skipped subsequently, when business earning will drop to normal level. It would be the better policy to that company where stockholders prefer at least a certain amount of regular income or return.

### **2.6.2 No Immediate Dividend Policy**

If the company does not declare dividend unless the company earn large earnings is called no immediate dividend policy. In other words, if there is no any hurry about dividend payment and if it could be only when the company earns more profit is known as no immediate dividend policy. This policy is usually pursued the following circumstances:

- When the firm is new and rapidly growing concern, which needs tightly amount of funds to finance its expansion program.

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<sup>21</sup> Richard A. Barley and Steward C. Myers, "Principles of Corporate Finance", (McGraw Hill International Edition, 1988), p.375

- When the firm excess to capital market is difficult.
- When availability of funds is costlier.
- When stockholders have agreed to accept higher return in future.

In fact, this policy should follow by issue of stock dividend (bonus shares)

### **2.6.3. Regular Stock Dividend Policy**

If the company regularly pays dividends to its shareholders in stock instead of cash, then it is called regular stock dividend policy. Regular stock dividend policy is also designated as bonus share. This policy should follow only when the firm needs cash generated by earnings to cover its modernization and expansion project.

### **2.6.4. Irregular Pay Dividend Policy**

It is the policy in which the firm doesn't pay any fixed amount of dividend every year or dividend varied in correspondence with change in earnings i.e., higher dividend payment for higher earnings and lower dividend payment for lower earnings. The firm with unstable earnings generally adopts this policy. When there are investment opportunities the company retains more and when there are no any investable opportunities, the company distributes the earning as dividend. In this policy, there is no regularity of dividend payment is made.

In Nepalese context, most of the Nepalese companies follows irregular pay dividend policy while reveal the study for this research, it has been seen that all the five sample banks has been declaring either cash dividend or stock dividend (bonus share) and in some year both cash as well as stock dividend was declared.

## **2.7 Factors influencing dividend policy**

Generally, there is positive relation between earning and dividend, therefore as earning increase the dividend also increases and vice versa. Most of the government owned public enterprises are operating in loss. Therefore there is no question of paying dividend arises rather to minimize losses. But joint venture banks, joint venture companies and privately owned companies are operating in profit. In such organization, dividend policies play vital role although all of them are not considering interest of shareholders' benefit as a whole. So, the challenge of the financial management is to balance between company's fund requirement and stockholders expectations. And the financial managers should analyze various factors when approaching a dividend decisions there different can be listed as follows decision. The different factors can be listed as follows:

### **i) Access to Capital Market:**

A company, if does not sound good liquid position, can pay dividend if it is able to raise debt or equity. If it has a record of profitability it will not find much difficulty in raising funds in the capital market. Easy accessibility to the capital market provides flexibility to the management in paying dividends as well as in meeting the corporate obligation. Larger firms

tends to be more mature and thus have easier access to the capital market which reduce their dependence on internally generated funding and allows for higher dividend payout rate.

**ii) Inflation:**

Inflation is another factor which influences firm's dividend decision. During inflation period, price will rise and funds generated from depreciation may be inadequate to replace equipment. If the assets are to be replaced in near future, consequently greater profit retention may be required. As a result dividend payment ratio will be low.

**iii) Earning Predictability:**

A firm that has relatively stable earning is often able to predict approximately what its future earnings will be. Such a firm is therefore more likely to payout a higher percentage of its earnings. The unstable firm is uncertain about the hope of earnings that will be realized in subsequent years, so, it is likely to retain a high proportion of current earnings. A lower dividend will be easier to maintain if earnings fall off in the future.

**iv) Investment Opportunities:**

When many investment opportunities exist in the environment, then the company wishes to retain its earning to grab the opportunity. But if investment opportunity is infrequent, the company distributes its earning in the form of dividend rather than retention. If the company retains earning at the time of infrequent investment opportunity, the retained fund would either be reinvested in short term securities yielding nominal returns or remain idle. This will have negative impact on shareholders' wealth, and leads in decreasing market stock price.

**v) Liquidity:**

The cash or liquidity position of firm influences its ability to pay dividend. The payment of dividend means cash outflow. Although a firm may have adequate earnings to declare dividend, it may not have sufficient cash to pay as dividend. Thus, the cash position of the firm is an important factor in paying the dividend, the greater cash position and overall liquidity of a company, the greater its ability to pay dividend. A firm may have sufficient retained earning but if they are invested in fixed assets, cash may not be available to make dividend payments. Thus the company must have adequate cash available as well as retained earning to pay dividend.

**vi) Ownership Control:**

The objective of maintaining control over the company by existing management group or the body of shareholders can be an important variable in influencing the company's dividend policy. When a company pays large dividend its cash position is affected. As a result, the company will have to issue new shares to raise fund to finance the investment programme. The control of the existing shareholders will be diluted if existing shareholders do not or

cannot substitute additional shares. Under these circumstances, the payment of dividends may be withheld and earnings may be retained to finance the firm's investment opportunities<sup>22</sup>.

**vii) Restrictions in debt contracts or loan agreement:**

Restriction in debt contracts may specify that dividends may be paid only out of earnings generated after sign in the loan agreement and only when net working capital is above a specific amount. Also, preferred dividend take precedence over common stock dividends. The restriction is employed by the lenders to preserve the company's ability to service debt. Usually it is expressed as a maximum percentage of cumulative earnings. When such a restriction is in force, it naturally influences the dividend policy of the firm<sup>23</sup>.

**viii) Legal Considerations:**

Legal restriction may limit the amount of dividend. These restrictions can be divided into three categories. These restrictions may prevent a company from paying dividends, while specific limitations issue by state. Generally a corporation may not pay a dividend

- a) If the firm's liabilities exceeds its assets.
- b) If the amount of the dividend exceeds the accumulated profits created earning.
- c) If the dividend is being paid from capital investment in the firm.

## **2.8. Legal Provisions regarding Dividend Policies**

In Nepal, the Nepalese company act-1997 makes some legal provisions for dividend payments. These provisions may be stated as follows:

Section 2 states that bonus shares (stock dividends) means shares issued in the form of additional shares to existing shareholders by capitalizing the surplus from the profits or the reserve fund of a company. The term also denotes an increase in the paid up value of the shares after capitalizing the surplus from the profits or the reserve fund of a company.

Section 47 has prohibited company for purchasing its own shares. This section states that no company shall purchase its own shares or supply loans against the security of its own share.

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

Section 140 dividends and subsection of this section are as follows:

Sub-section (1): Except in the following circumstances, dividend shall be distributed among the shareholders within 45 days from the date of decision to distribute them.

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<sup>22</sup> James C. Van Horne, op. cit. p. 331

<sup>23</sup> J. Fred Weston and Eugene F. Brigham, "Essential of Managerial Finance", (Hinsdale: The Dryden Press,1974,p.527

- a. In case any law forbids the distribution of dividends.
- b. In case the right to dividend is disputed.
- c. In case dividends cannot be distributed within the time limit mentioned above owing to circumstances beyond any one's control and without any fault on the part of the company.

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

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

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

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

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

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

- ) Concerned BOD and top management will be responsible for implementation of these dividend policies.
- ) Ministry of Finance shall make necessary arrangement regarding fixation of dividend percentage by coordinating all concerned corporation and ministries.

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

## **B. CAPITAL MARKET IN NEPAL**

The capital market of Nepal is in initial stage of development. The history of capital market in Nepal is not very long as compared to developed capital markets. In the era of Rana Prime Minister Juddha Samsher, when Gunja Man Singh, the first secretary at the Nepalese Embassy in England, returned back to Kathmandu and set up the 'Industrial Council', the capital market in Nepal got initiated. The council drafted the Company Act and Nepal Bank Act for the first time in 1936. In 1937, Biratnagar Jute Mills Ltd. initiated the public flotation of shares in the securities market. There were very few companies in Nepal issuing shares to the general public until another Company Act came into operation in 1951. The capital market of Nepal gained momentum with the establishment of Nepal Rastra Bank, the central bank of Nepal, in 1956 and Nepal Industrial Development Corporation (NIDC) in 1959. The securities that generally floated in the market were mainly the government securities and these securities were fully traded under the management and supervision of Nepal Rastra Bank.

The institutional development of capital market in Nepal started from the year 1976 when Securities Exchange Center was established under the Company Act with the joint capital contribution of Nepal Rastra Bank and NIDC. The industrial policy of the government also encouraged the promotion of securities exchange activities in Nepal. The main objective of the establishment of the center was to mobilize public savings and encourage the people to participate in the ownership of industries and business enterprises. As a securities exchange intermediary, its role was to organize and provide marketing facilities of channeling securities exchange business through the center. Its activities included the purchase, underwrite and sale directly or through the licensed brokers or the sub-brokers of the center, the shares, stocks and also Development Bond as wells as Treasury Bills issued by the government.

The real boost in the capital market began with economic liberalization. As a pre condition to economic liberalization, the Industrial Enterprise Act was enacted in 1982 and Foreign Investment and Technology Transfer Act came into effect since 1983. Since 1985, Nepal has been following liberal economic policy. In its first stage of implementation, banking and financial sector was liberalized. In the mid 80's, Nepal opened its door to foreign investors as joint venture partners in the banking sector, which revolutionized commercial banking services in Nepal. Since then, a variety of private sector based financial institutions have evolved. In 1992, the Finance Company Act was amended. This enabled finance companies to be established to function in various areas such as leasing, housing finance, real state and hire



purchase. These institutions were also allowed to perform capital market functions such as share issue, portfolio management, market making and custodial services.

The establishment of Nepal Stock Exchange Limited (NEPSE) complemented the growth of these financial institutions. In 1993, Government affected Securities Exchange Regulations, 1993 for the implementation of the Securities Exchange Act 1983. The Regulations have detailed the functions, power and duties of Securities Board<sup>24</sup>. In 1994, the Security Exchange Center was converted into NEPSE for securities trading by private brokers and security Exchange Board was established for oversight functions as a regularly body. Before the board come into existence, the center carried on both the functions. The amendment also permitted private sector market intermediaries and set the operating guidelines for intermediary functions such as brokering, market making, issue management and portfolio management.

The changes seen in the market with these regulatory and institutional changes were phenomenal. It is only since this change in 1993 that a true capital market evolved where prices are determined on an open market basis. However, now even after 15 years, it seems that the transitional period of the capital market of Nepal is still not over and it is likely to take some years to gain maturity. Now, NEPSE has entered in Automation Trading System, the daily trading of shares has been increased and will boost up after introduction of Central Depository System (CDS). This will lead to large transaction of shares in a day and objective of Automation Trading System will be achieved. Among various possible investment alternative only common shares, preference shares, government bond, debentures and mutual funds are traded in the capital market of Nepal. Common shares monopolize the present capital market in Nepal. The number of companies issuing preference shares debenture and mutual fund can be counted at our fingertips<sup>25</sup>.

## **C. REVIEW OF RELATED STUDIES**

### **I. Review of Major International Studies**

As mentioned earlier, there have been so many studies made by the different persons and institutions for dividend policy and stock price. There are two opinions regarding to dividend payout and market price of stocks. One point of view is that dividends are irrelevant and the amount of dividend payout does not affect the market value of the stock. The other is dividends are relevant and the amount of dividend paid affect the market value of the stock.

Always a critical and confused question has arose, whether dividend policy affect the market value of the stock or not. To put light in these matter different studies made by different international scholars and researchers should be overviewed. Therefore some of the main researches are discussed below:

#### **1. Walter's Study<sup>26</sup>**

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<sup>24</sup> Manohar K. Shrestha, R.B. Poudel, D.P. Bhandari, op. cit., p.29

<sup>25</sup> Geeta Pant, "Dividend Policy and Its impact on stock price", An unpublished MBS Thesis, (CDM, T.U., April 2005), pp.21-24

<sup>26</sup> James E. Walter, "Dividend Policies and Common Stock Price", *Journals of Finance*, Vol. ii, (March, 1966), pp.29-41

An approach developed by Professor Walter is of considerable interest. Walter conducted a study on dividend and stock prices in 1960. The main point which he emphasized is that there is a significant relationship between the internal rate of return and cost of capital, and are determining factors to retain profit or distribute dividends. As long as the internal rate of return is greater than the market rate or cost of capital (k), the stock price will be enhanced by retentions and will vary inversely with dividend payout.

Walter's Model is based on the following assumptions:

- i. The firm finances all investment through retained earnings, that is debt or new equity is not issued.
- ii. The firm internal rate of return 'r' and its cost of capital 'k' are constant.
- iii. All earnings are either distributed as dividends or reinvested internally immediately.
- iv. The values of EPS and DPS are assumed to remain constant forever in determining a given value.
- v. The firm has a very long or infinite life.

He insists on the fundamental premise that the retained earnings affect stock prices in consideration of their impact on future dividends. Operating on the objective of maximizing the wealth position of the ordinary shareholders the appropriate dividend payout is suggested by the following formula:

$$P = \frac{D \Gamma r / k (E Z D)}{k}$$

where,

P = Theoretical market price per share.

D = Dividend per share.

E = Earning per share.

r = Internal rate of return.

k = Market capitalization rate or cost of capital.

According to Walter's model, the optimum dividend policy depends on the relationship between the firm's internal rate of return 'r' and its cost of capital 'k'. He had tried to conclude some decisions and suggested three conditions of the firm as follows:

**Condition 1: Growth firms, (r>k)**

Growth firms are assumed to have profitable investment opportunities. These firms would reinvest retained earning at a rate which is higher than the rate expected by shareholders.

These firms will maximize the value per share; if they follow a policy of retain all earnings for internal investment. Thus, the optimum payout ratio for a growth firm is zero. The market value per share  $P_0$  increase as payout declines when  $r > k$ .

### **Condition 2: Normal Firms, ( $r=k$ )**

If the firm have internal rate of return equals to rate expected by shareholders, there is no role of dividends on stock price variation i.e., dividends are indifference from stock prices. In other words, dividend payout does not affect the value of shares. Whether the firm retains the profit or distributes dividend is matter of indifference. This kind of firm is referred as normal firms.

### **Condition 3: Declining Firms, ( $r < k$ )**

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

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

## **2. Elton and Gruber's Study<sup>27</sup>**

Most tests regarding dividend is focused on the tax effect and on financing signaling. They cover the impact of other factors like flotation cost, transaction cost, institutional restrictions and preference for dividend. The companies that pay dividend establish an ex-dividend date, stocks transacted before that carry the right to the dividend and stocks transacted after that date does not carry right to dividend with it.

They conclude that the value of stock decline by less proportionately than the value of dividend on the ex-dividend date because the investors value dividend is less than the capital gains. The study found that on average a stock declined by 0.78 of the dividend on ex-dividend date. They interpret this result as consistent with a clientele effect where investors in high tax brackets should a preference for capital gain over dividend and vice versa.

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<sup>27</sup> Edwin J. Elton and Martin J. Gruber, "Marginal Stockholder tax rates and the clientele effect", *Review of Economics and Statistics*. Vol. 52 (Feb, 1970) pp. 68-74

### 3. Modigliani and Miller's Study<sup>28</sup>

It has been argued that dividend policy has no effect either on the price of a firm's stock or its cost of capital that is, dividend policy is irrelevance. This theory was first introduced by Franc Modigliani and Melton H. Miller in 1961 and popularly known as M-M Approach. Through an article "Dividend Policy, Growth and Valuation of Shares", they advocated that dividend policy does not affect the value of the firm i.e., dividend policy has no effect on the share price of the firm. The M-M Approach focuses the irrelevant effect of dividend policy in the firm valuation arguing that, the value of the firm is determined only by its basic earnings power and its business risk. Thus the value of the firm depends on the income from its assets and not on how this income is split between dividend and retained earnings.

*M-M Approach is based on the following assumptions:*

- The firm operates in perfect capital market in which all investors are rational. Information is available to all free of cost, instantaneous transaction without costs, securities are infinitely divisible, and no investor is large enough to influence the market price of securities.
- There is no flotation cost on securities issued by the firms.
- A world of no taxes.
- The firm has a fixed investment policy which is not subject to change.
- Risk of uncertainty doesn't exist.

Modigliani and Miller provided the proof in support of their argument in the following manner.

#### Step 1

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

$$P_0 \times \frac{D_i \Gamma P_i}{1 \Gamma K_e} \dots\dots\dots (i)$$

Where,

P<sub>0</sub> = Market price at the beginning or the zero period.

D<sub>i</sub> = Dividend per share to be received at the end of the period.

P<sub>i</sub> = Market price of the share at the end of the period.

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<sup>28</sup> Melton H. Miller and Franc Modigliani, "Dividend Policy, Growth and the Valuation of Shares". *Journal of Business* (Oct. 1961), pp. 411-433

$K_e$  = Cost of equity capital (assumed constant)

**Step 2**

Assuming no external financing, the total capitalized value of the firm would be simply the number of shares times price of each share, thus

We have,

$$n P_o X \frac{n(D_i \Gamma P_i)}{1 \Gamma K_e} \dots\dots\dots (ii)$$

where,

$n$  = number of equity share at zero period.

**Step 3**

If the firm's internal source of financing its investment opportunity fall short of the funds required and  $n$  is the number of new shares at the end of year 'i' at price  $P_i$ , then equation (ii) can be written as:

$$n P_o X \frac{n D_i \Gamma (n \Gamma \zeta n) P_i Z \zeta n P_i}{1 \Gamma K_e} \dots\dots\dots (iii)$$

where,

$n$  = Number of shares at the beginning

$n$  = Number of equity shares issued at the end of the period.

**Step 4**

If the firm were to finance all investment proposals, the total amount of new share issued would be given by the following equation.

$$n P_i = I - (E - n D_i)$$

Or  $n P_i = I - E + n D_i \dots\dots\dots (iv)$

where,

$n P_i$  = The amount obtained from the sales of new shares to finance capital budget.

$I$  = The total amount requirement of capital budget.

$E$  = Earning of the firm during the period.

$n D_i$  = Total Dividend paid.

$(E - nD_i) =$  Retained Earning

**Step 5:**

By substituting the value of  $nP_i$  from equation (iv) to equation (iii) we find.

$$\begin{aligned} nP_o &= \frac{nD_i \Gamma(n \Gamma \zeta n) P_i Z(I Z E \Gamma n D_i)}{1 \Gamma K_e} \\ &= \frac{nD_i \Gamma(n \zeta n) P_i Z I \Gamma E Z n D_i}{1 \Gamma K_e} \\ &= \frac{(n \Gamma \zeta n) P_i Z I \Gamma E}{1 \Gamma K_e} \end{aligned}$$

## Step 6: Conclusion

There is no role of dividend in above equation. So, Modigliani and Miller concluded that dividend policy has no effect on the share price. i.e., dividends are irrelevant.

However, the view that dividend is irrelevant is not justified once the assumption is modified to consider the realities of the world. In practice, every firm follows one kind of dividend. This selection of a certain dividend policy of a firm depends upon the mature ness and nature of the firm.

## 4. Van Horne and Mc Donald's Study<sup>29</sup>

James C. Van Horne and John G. Mc Donald conducted a most comprehensive study on dividend policy and new equity financing. The purpose of this study was to investigate the combine effect of dividend policy and common stock. They had used a well-known valuation model i.e. cross section regression model. The required data were collected from 86 electric utility firms included in the COMPUSTAT utility data tape and 39 firms in the electronics and electronics component industries as listed in the COMPUSTAT industrial data tape. By using different methodology, they compared the results obtained from firms which both pay dividends and engage in new equity financing with other firms in an industry sample. They concluded that for electric utility firm in 1968, share value does not adversely affected by new equity financing in the presence of cash dividend, expect for those firms in the highest new issue group and it makes new equity a more costly form of financing than the retention of earnings. They also indicate that the payment of dividend through excessive equity financing reduce share prices. For electronics and electronics component industry, a significant relationship between new equity financing and share value was not observed.

## 5. Gordon's Study<sup>30</sup>

Myron Gordon (1962) explained that the dividend policy of a firm influences the value of a share even in a situation where the return on investment and required rate of return on investment are equal. This model explains that investors are not indifferent between current dividend and retention of earning. The main focus of the study was "Investors give more emphasis to the present dividend rather than for future capital gains." That is to say current dividends are considered certain and risk less. Therefore, this model is preferred by rational investors as compared to deferred in future, as future is uncertain and the investors avoid uncertainty.

He emphasized his argument that an increase in dividend payout ratio leads to increase in the share prices for the reason that investors consider the dividend yield ( $D_1/P_0$ ) is less risky than expected capital gain.

This model is based on following assumptions:

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<sup>29</sup> James C. Van Horne and John G. Mc Donald, "Dividend policy and new equity financing", *Journal of Finance*, (May, 1971), p.517

<sup>30</sup> Myron J. Gordon, "Investment, Financing and Valuation of Corporation", *Journal Homewood* Vol. iii, Richard D. Irwin, (1962),p.76

- i. The firm is an all equity firm.
- ii. Internal rate of return (r) of the firm is constant.
- iii. The cost of capital ( $K_e$ ) is constant.
- iv. The firm and its stream of earnings are perpetual.
- v. The corporate taxes do not exist.
- vi. The retention ratio 'b' once decided will remain constant. Thus the growth rate,  $g=br$  is constant.
- vii. The cost of capital for the firm is greater than the growth rate i.e.  $K_e > g$ .
- viii. No external financing is available. So, retained earnings would be used to finance for any expansion.

Based on the above assumptions, Gordon has provided formula to determine the market value of a share as following:

$$P = \frac{E(1-b)}{K_e - br}$$

where,

P = Market value of share

E = Earnings per share

b = Retention ratio

(1-b) = Dividend payout ratio

$E(1-b)$  = Dividend per share

$K_e$  = Capitalization rate or cost of capital

$br$  = Growth rate of the firm

According to this model, the following facts are revealed:

In case of growth firms, share price tends to decline in correspondence with increase in payout ratio or decrease in retention ratio i.e. high dividend corresponding to earnings leads to decrease in share price. Therefore dividend and stock prices are negatively correlated in growth firm.

In case of normal firm, share price remains constant regardless of change in dividend policies. It means dividend and stock prices are free from each other in normal firm i.e.  $r=K_e$



In case of declining firm, shares price tends to rise with increase in payout ratio.

## 6. Lamont's Study<sup>31</sup>

The study shows that the aggregate dividend payout ratio forecast excess return on both stocks and corporate bonds. It means high dividends forecast high return and high earnings forecast low return. The correlation of earnings with business conditions gives them predicted power of returns; they contained information about future returns that is not captured by other variables. Dividend and earnings contribute explanation power of short horizon but however for long horizon stock price matters. There are two reasons, why the payout ratio forecast return i.e.

- The payout ratio forecasts return because the level of dividends forecasts future return.
- The payout ratio forecasts return because the level of earning forecasts future return.

### *Conclusion of the Study*

The dividend payout ratio helps forecast returns because both dividends and earnings have separately identifiable forecasting ability.

- i) Dividend contains information about future returns because they help to measure the value of future dividends while earnings contain information because they are corrected with future business conditions.
- ii) Both high current prices and high current earnings forecast low future returns.
- iii) To forecast return by using earning yield only is not a good.
- iv) High dividends forecast high future returns, so to forecast return by using dividend yield only is more successful.
- v) Dividend price by any smooth accounting variable capturing normal growth produces roughly the same forecasting variables.

## 7. Friend and Puckett's Study<sup>32</sup>

Friend and Puckett (1964) conducted a study and 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 selected to permit a distinction made between the results for growth and non-growth industries and to provide, a basis for

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<sup>31</sup> Owen Lamont, "Earning and Expected Return", *The Journal of Finance*, Vol. LHI. No.5, (Oct, 1998), pp.1563-1587

<sup>32</sup> Irwin Friend and Marshall Puckett. "Dividend and Stock Prices." *The American Economic Review* (1964), Vol. LIV. pp. 656-682.

comparison with result by other authors for earlier years. They also considered cyclical and non-cyclical industries that 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 independent variables in their regression model of price function. They used supply function i.e., dividend function as well. In their dividend function, earnings, last year's dividends and price earnings ratio are independent variables. They quoted that the dividends and price earning ratio are independent variables. They quoted that the dividend supply function (equation) was developed by adding to the best types of relationship developed by Linter. Symbolically, their price function and dividend supply function are:

$$\text{Price Function: } P_t = a + b D_t + cR_t + d(E/P)_{t-1}$$

Where,  $P_t$  = Share price at time 't'

$D_t$  = Dividends at time 't'

$R_t$  = Retained earnings at time 't'

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

$$\text{Dividend Supply Function: } D_t = e + fE_t + gD_{t-1} + h(E/P)_{t-1}$$

Where  $E_t$  = Earning per share at time 't'

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

Their study was based on the following assumptions:

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

Their regression results based on the equation;  $P_t = a + bD_t + cR_t$  showed the company's strong dividend and relatively weak retained earnings effects in three of the industries; i.e., chemical, foods and steels. Again they tested other regression equation by adding lagged earning 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 that more than 80% of the variation in stock price could be explained by three

independent variables. Dividends have predominant influence on stock price in the same three out of five industries but they found the difference between the dividend and retained earnings coefficient are not quite so marked as in the first set of regression. They also found that the dividends and 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 dividend supply equation;  $D_t = e + fE_t + gD_{t-1} + h(E/P)_{t-1}$  and the dividend price equation for four industry groups in 1958. In their derived price equation it seems that there was 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 seem to 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 results suggested price effects on dividend are probably not serious of bias in the customer derivation of dividend and retained earnings effects on stock prices. Though, such a bias might be market if the disturbing effects of short run income movements are sufficiently great.<sup>33</sup>

Further, they used 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 the most of the cases. The only exceptions were steels and foods in 1958. They considered chemicals, electronics and utilities as growth industries in their 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;  $P_t = a + bD_t + cR_t$  by using normalized earnings again. They obtained normalized retained earnings by subtracting dividends form normalized earnings. That normalized procedure was based on the period 1950 to 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. When they examined the later equation they found that the difference between dividend and retained earning coefficient disappeared. Finally they concluded that management might be able to increase price somewhat by raising dividends in foods and steels industries.<sup>34</sup>

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<sup>33</sup> Ibid p. 675

<sup>34</sup> Ibid. p. 678

They concluded more detailed examination of 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.

## 8. Deepak Chawla and G. Srinibuasan's Study<sup>35</sup>

Chawla and Srinibuasan conducted a most comprehensive study on Impact of Dividend and retention on share price. They took 18 chemicals and 13 sugar companies and estimated cross section relationship. For the year 1969 and 1973, the required data were collected from the official directory of Bombay Stock Exchange. The basic objective of the study were:

- ) To estimate a model to explain share price dividend and retained earning relationship.
- ) To test the dividend, retained earning hypothesis.
- ) To examine the structural changes in the estimated relations overtime.
- ) To achieve these objectives, they used simultaneous equation model as developed by Friend and Puckett (1964). The model in its unspecified form was as follows:

### 1. Price Function

$$P_t = D_t, R_t, (P/E)_{t-1}$$

### 2. Dividend supply function

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

### 3. Identity

$$E_t = D_t + R_t$$

Where,

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<sup>35</sup> Deepak Chawla and G. Srinibuasan, "Impact of dividend and retention on share price - an econometric study", Decision, Vol-14, No.3, (July-Sept 1989)

$P_t$  = Market price per share at time 't'

$D_t$  = Dividend per share at time 't'

$D_{t-1}$  = Dividend per share at time 't-1'

$R_t$  = Retention per share at time 't'

$(P/E)_{t-1}$  = Price earning ratio at time 't-1'

## II Review of Nepalese Research Studies

Since, Nepalese capital market is small and is its initial stage of development, there are different studies has been done regarding corporate dividend policy and its impact on share prices in Nepal. Here some of the review of those studies has been done and are following:

### 1. K.D. Manadhar's Study<sup>36</sup>

The main statement of the problem of the study is to set test whether Nepalese firms consider the lagged earnings and dividend paid to pay the dividend in current year. To test this problem, he has considered 17 corporate companies as samples and set different hypothesis and drawn the following conclusions.

- ) There is significant relationship between the change in dividend policy in terms of dividend per share and changed in lagged earnings.
- ) In overall, there is positive relationship between change in lagged consecutive earnings and dividend per share.
- ) There is relationship between distributed lag profits and dividend.
- ) When change in lagged consecutive earning is greater than zero, in 65% the case change in DPS.
- ) Overall, increase in EPS (t) has resulted to increase in the dividend payment in 66.6% of the cases while decrease in EPS resulted decrease in dividend payment.
- ) Nepalese corporate firms have followed the practice of maintaining constant dividend payment per share.
- ) Corporate firm do not take into account one year or two year lagged earnings.

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<sup>36</sup> Kamal Das Manandhar, "Preliminary Test of Lagged Structure of Dividend", *Management Dynamics*, Vol.10 (Shankar Dev Campus, 2000) pp.5-12

## 2. M. Bhattarai's Study<sup>37</sup>

The study was carried out by using data of NGBL and HBL banks and NLGI and UICNL insurance companies of the period 1994/95 to 1999/2000 with the following objectives:

- i) To study the practices and effort made in dividend policy.
- ii) To find out the impact of dividend policy on market price of stock.
- iii) To analyze if there is any uniformity among EPS, DPS, MPS and DPR.

*Following findings were observed in Bhattarai's Study:*

- ) EPS of NGBL, HBL and NLGI are in fluctuating trend but UICNL is in increasing trend.
- ) There is no consistency in dividend payment.
- ) There is high fluctuation in MPS of NGBL & HBL.
- ) The correlation between MPS and DPS of NGBL is positive and negative for rest of the companies.
- ) The influence of DPS is more than EPS to the MPS.

## 3. Pramesh K.C.'s Study<sup>38</sup>

This study on "Dividend Policy of Joint Venture Banks in Nepal" was carried out by using data of NABIL, NISBL and NGBL Bank of the period 1984/85 to 1989/90 with the following objectives:

- i) To provide conceptual framework of dividend models.
- ii) To analyze the financial variables affecting the stock value and interpret the dividend paying implication under dividend valuation model and
- iii) To provide suggestions, this will give vision for determination and support of dividend policy of joint venture banks.

*The summary of the major findings of the study were as follows:*

- ) The EPS of all joint venture banks are raised satisfactorily.
- ) There is correlation between EPS and BPS.

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<sup>37</sup> Manoj Bhattarai, "Dividend Policy and its Impact on Market Price of Stock", An unpublished MBS Thesis, (Shanker Dev Campus, 2002), pp. 8-9.5

<sup>38</sup> Pramesh K.C., "Dividend Policy of Joint Venture Banks in Nepal", An unpublished MBA Thesis, (CDM, TU, 1991), pp.17-95

- ) Amount of cash dividend is rising each year.
- ) The P/E ratio, earning yield, dividend yield express cyclical behavior.
- ) R/E ratio is fluctuated in smaller proportion.
- ) The market value per share of joint venture banks in Security Exchange Center is significantly fluctuated and trading on high price.
- ) Joint venture banks in Nepal are seen as growth banks because actual capitalization rate (r) is higher than the normal capitalization rate (k) i.e.,  $r > k$ .
- ) Under CAPM, the beta risk of joint venture banks is less risky.
- ) Cash BPS (CSPS) of joint venture banks are significantly increasing in each year.
- ) The annual average growth rate in CDPS of NABIL, NISBL and NGBL Bank are recorded as 35%, 51.7%, and 100% respectively.

#### 4. N. Adhikari's Study<sup>39</sup>

Adhikari, in his master's degree dissertation on corporate dividend practices in Nepal has analyzed and examined the relationship between dividends and stock prices. His major findings are:

- ) Stocks with larger ratio of DPS to book value per share(BVS) have higher liquidity.
- ) Stocks with larger ratio of DPS to BVS have higher profitability.
- ) There is positive relationship between the ratio of DPS to BVS and interest coverage ratio.
- ) Positive relationship is seen between the ratio of DPS to BVS and turnover ratio.
- ) There is positive relationship between dividend payout ratio and current ratio whereas the negative relationship between dividend payout and quick ratio.
- ) There is positive relationship between DPS to MPS and profitability indicated that stocks with larger ratio of DPS to MPS have high earnings.

#### 5. R.S. Pradhan's Study<sup>40</sup>

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<sup>39</sup> Navraj Adhikari, "Corporate Dividend Practices in Nepal", an unpublished MBA Thesis, (CDM, TU, 1999), pp. 8-105

<sup>40</sup> Radhe Shyam Pradhan, "Stock Market Behaviour in Small Capital Market: A case of Nepal", *The Nepalese Management Review* Vol. IX, (Summer, 1993), pp. 23-49

The study on stock market behaviour of Nepal examined the relationship of market equity, MPS to BVS, price-earning and dividend with liquidity, profitability, leverage, assets turnover and interest coverage. The required data were collected from 17 companies covering the year 1986 to 1990.

*The objectives of this study were as follows:*

- ) To assess the stock market behaviour in Nepal.
- ) To examine the relationship of market equity, MPS to BVS, price-earnings and dividend with liquidity, profitability, leverage, assets turnover and interest coverage.

*The main findings observed in Pradhan's study were as follows:*

- ) Higher EPS leads to larger the ratio of DPS.
- ) Stocks with high ratio of DPS to the MPS have higher liquidity position.
- ) Positive relationship between the ratio of DPS to MPS and interest coverage ratio.
- ) DPS an MPS is positively correlated.
- ) Positive relationship between dividend payout and liquidity.
- ) Positive relationship between dividend payout and profitability.
- ) Positive relationship between dividend payout and turnover ratio.

## **6. S. Timilsena's Study<sup>41</sup>**

This study on dividends and stock prices was carried out by using the data for 16 enterprises from 1990 to 1994.

*The objectives of this study were as follows:*

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

The study was conducted by using multiple regression models of three independent variables. Besides this, it is tried to highlight the relationship between stock price and other independent variables using separate simple linear regression equations.

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<sup>41</sup> Sadakar Timilsena, "Dividend and Stock Prices: An Empirical Study", Unpublished MBA Thesis, (CDM, TU, 1997), pp. 1-80.



*The major findings of the study were as follows:*

- ) The relationship between DPS and MPS is positive.
- ) DPS affects the MPS variedly in different sectors.
- ) Changing dividend policy or DPS might help to increase MPS.
- ) The relationship between MPS and retained earnings is not prominent.
- ) The relationship between MPS and lagged price earnings ratio (P/E ratio) is negative.

# CHAPTER III

## RESEARCH METHODOLOGY

### 3.1 Concept

Research is a process of systematic and in-depth study or search for any particular topic or subject of area of investigation on the basis of collection, compilation, presentation and interpretation of relevant details or data. It is actually a journey to discover some facts. And Research Methodology describes the methods and process applied in the entire aspects of the study. In other words, Research Methodology refers to the different techniques. And tools used to make the study significant and efficient. It is the path from which we can solve the research problem systematically. According to C.R. Kothari, "Research Methodology refers to the various sequential steps to adopt by a researcher in studying problem with certain objectives in view<sup>42</sup>".

### 3.2 Research Design

Research design refers to the conceptual structure within which the research is conducted. According to F.N. Kerlinger "Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variances<sup>43</sup>".

The research design in this study basically follows the comparative evaluation of dividend policy in the sample banks and its impact on stock price. Analytical and descriptive approaches are used to evaluate the dividend policy of the sample firms. This research study attempts to analyze the relationship between the dividend policy and market price. Similarly, the other variable relating to the dividend policy and the market price of the share have been considered.

### 3.3 Population and Sample

As this study is based on the data of the companies listed in NEPSE, 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 and actively traded companies, the sampling will be done accordingly. The study will cover altogether five commercial banks.

The population of the study is as follows.

- i. Nepal Bank Limited
- ii. Rastriya Banijya Bank
- iii. Agriculture Development Bank
- iv. NABIL Bank Ltd.

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<sup>42</sup> C. R. Kothari "Quantitative Techniques", (New Delhi: Vikas Publishing House Pvt. Ltd., 1978), p.19

<sup>43</sup> F.N. Kerlinger, " Foundation of Behavioral Research ", (New Delhi: Surjeet Publication, 1978),p. 300

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|--------------------------------|--|
| v. Nepal Investment Bank Ltd.  | vi. Standard Chartered Bank Nepal Ltd.         |
| vii. Himalayan Bank Ltd.       | viii. Nepal SBI Bank Ltd.                      |
| ix. Nepal Bangladesh Bank Ltd. | x. Everest Bank Ltd.                           |
| xi. Bank of Kathmandu Ltd.     | xii. NCC Bank Ltd.                             |
| xiii. Lumbini Bank Ltd.        | xiv. Nepal Industrial and Commercial Bank Ltd. |
| xv. Laxmi Bank Ltd.            | xvi. Kumari Bank Ltd.                          |
| xvii. Siddhartha Bank Ltd.     | xviii. Macchapuchre Bank Ltd.                  |

The samples to selected are as follows:

1. Standard Chartered Bank Nepal Ltd. (SCBL)
2. NABIL Bank Ltd. (NABIL)
3. Himalayan Bank Ltd. (HBL)
4. Nepal Investment Bank Ltd. (NIBL)
5. Everest Bank Ltd. (EBL)

### **3.4 Sources of Data**

All data used in this study is of secondary one. The secondary data has been collected from annual reports, web sites of concerned banks publications of Nepal Stock Exchange and Nepal Rastra Bank. For the analysis of data, data of 9 years from 2002 to 2010 has been gathered.

### **3.5 Methods of Data Analysis**

The analysis of data has been done in two ways, by financial and statistical tools. The relationship between different variables related to study would be drawn out using financial and statistical tools. The main indicator EPS, DPS, MPS, P/E ratio, Dividend yield, Earning yield and D/P ratio will be calculated in this study. Likewise, statistical tools arithmetic mean, simple regression analysis, standard deviation, coefficient of correlation and test of hypothesis will be calculated in this research.

The various calculated result obtained through financial and statistical tools are tabulated under different heading then, they are compared with each other to interpret the result. In this way, Simple regression analysis has been used to study the influences of independent variable/son dependent variable/s. It helps in the studying the effect and the magnitude of effect of single independent variable on dependent variable to determine whether the variable

of dividend per share related to earning per share or not, the following regression model has been applied.

$$y = a + bx$$

Where,

y = dependent variable

a = intercept

b = slope variable

x = independent variable

This model has been applied to examine the relationship between the EPS and DPS, MPS and DPS

The detailed methods have been listed as follows:

- Financial tools

- Statistical tools

## **A Financial Tools**

Financial tools are those, which help to study the financial strength and weakness of the sample firms. The financial tools used in this study are as follows.

### **i. Earning Per Share (EPS)**

EPS is one of the major factors that affect the dividend policy and stock price of a firm. Calculation of EPS helps to determine whether the earning capacity has changed over the period or not. If EPS is larger and also dividend is larger, the market stock price will be raised. So, it is assumed as an independent variable to determine the dividend and market stock price. It can be determined by

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

Where,

Earning available to common stockholders= Net profit after tax – preference dividend

### **ii. Dividend Per Share (DPS)**

DPS indicates the rupees earning distributed to common stockholders per share held by them. DPS also affects the market stock price, but it does not affect the EPS so, it is assured as an independent variable to the market stock price. Generally the higher DPS creates positive attitude of the shareholders towards the company's common stock which consequently helps

to increase the market stock price and it also works as an indicator of better performance of the company management.

It is calculated by dividing the total dividend distributed to equity shareholder by the total number of equity share outstanding, thus,

DPS =

### **iii. Market Price per Share (MPS)**

MPS is the trading price of the stock traded in the floor of capital market. MPS is one of the variables which are affected by DPS and EPS of the firm. If the EPS and DPS is high the MPS will also high MPS may be lower or higher than the book value. It depends up on the earning power and cost of capital. If the firm is of growing concern its earning power is greater than the cost of capital, then market value of share will be higher than the book value and if the firm is declining, its earning power lower than the cost of capital, then MPS will also be lower than book value.

### **iv. Retained Earning Per Share (REPS)**

Retained Earning is the amount retained within the firm itself after paying dividend to its shareholder. Company retains the earning if it sees the good market opportunity is it can earn more than the general shareholder does. REPS can be determined as

$$\text{REPS} = \frac{\text{EPS} - \text{DPS}}{\text{No. of ordinary shares}}$$

### **v. Dividend Payout Ratio (DPR)**

DPR reflects what percentage of profit is distributed as dividend and what percentage is retained as reserve and surplus for the growth of the firm. DPR depends upon the earning. Higher earning enhances the ability to pay more dividends and vice versa.

There is an inverse relationship between dividends and retained earning. The higher the DPS, the lower will be the proportion of retained earning and vice versa. The capacity of internal financing of the firm is checked by the retention ratio. DPR is the percentage of the net profit distributed as dividend. And DPR can be calculated as dividing DPS by the EPS. Thus

$$\text{DPR} = \frac{\text{Dividend per share}}{\text{Earning per share}}$$

And Retention Ratio = 1-DPR

### **vi. Price Earning Ratio (P/E Ratio)**

P/E Ratio is the best indicator to measure the stock price of the firm in capital market. The ratio reflects the market value per share for each rupee of currently reported earning per share. In other words, P/E Ratio given in which years the investment return bank. It is calculated by dividing the MPS by EPS. Thus

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

### vii. Dividend yield

A ratio between DPS to MPS is known as dividend yield. It evaluates the shareholder's return in relation to the market value of share. It is calculated by

$$\text{Dividend yield} = \frac{\text{Dividend per Share}}{\text{Market Price per Share}}$$

### viii. Earning yield

The inverse of P/E ratio is called Earning yield. It is measured as EPS divided by current MPS i.e.

$$\text{Earning yield} = \frac{\text{Earning Per Share}}{\text{Market Price per Share}}$$

In practice, EPS, P/E Ratio, Earning yield are the appropriate methods to measure the stock price fluctuation. But, EPS and P/E ratio are highly used.

## B. Statistical Tools

### i. Arithmetic mean

Arithmetic mean is the most common type of average. It is the number obtained by dividing the sum of all the items by the number of items. In general,  $x_1, x_2, \dots, x_n$  are given 'n' observations then their arithmetic mean, usually denoted by  $\bar{X}$  is given by,

$$\bar{X} = \frac{(x_1 + x_2 + \dots + x_n)}{n}$$

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

Where,

$\bar{x}$  denotes arithmetic mean,  $x_1, x_2, \dots, x_n$  are given set of observations and n denotes number of items observed.

### ii. 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. Among all the measures of dispersion, standard deviation is widely used. The standard deviation measures the absolute dispersion. Standard deviation is the positive square root of the arithmetic mean of the square of deviations of given data from their arithmetic mean. The greater amount of dispersion, the greater the standard deviation i.e. greater will be the magnitude of the deviation of the values from their mean. A small standard deviation means high degree of uniformity of the observation as well as homogeneity of the series, symbolically,

$$\text{S.D } (\dagger) \times \sqrt{\frac{[x_i - \bar{x}]^2}{n}}$$

### iii. Coefficient of variation (C.V.)

The relative measure of dispersion based on standard deviation is known as coefficient of variation. This is the best measure in statistics for comparing the variability, homogeneity or uniformity of two or more series of distributions. The distribution is considered as more homogeneous, more consistent, and more uniform if the C.V. of the distribution is lesser. The C.V. can be obtained as

$$\text{C.V. } \times \frac{\text{Standard Deviation (S.D.)}}{\text{Mean } (\bar{x})}$$

### iv. 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 degree of relationship between two set of figures. Correlation can either be positive or negative. If both variables are changing in the same direction, the correlation is said to be positive and when the two variables changes in opposite direction the correlation is said to be negative. In this study, simple coefficient of correlation is used to determine the relationship of different factors with dividend and other variables. The data related to dividend over different years are tabulated and their relationship with each other is drawn out. In this study, the coefficient of correlation is calculated to see the relationship of dividend per share with earning per share and market price per share with earning per share.

### v. Coefficient of Determination (R<sup>2</sup>)

The coefficient of determination is a measure of degree of correlation between two variables; one is independent and other being dependent variable. In other words, R<sup>2</sup> measures the percentage total variation in dependent variable explained by independent variables. The coefficient of determination can have value ranging from zero to one. If the unexplained variation is zero the value of R<sup>2</sup> will be one, which simply means that all the data points in the scatter diagram fall exactly on the regression line. And if value of R<sup>2</sup> is zero, there is no

correlation between two variables. In this study, coefficient of determination is calculated to see the degree of correlation of dividend per share with earning per share and market price per share with earning per share.

#### **vi. Probable Error (PE)**

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

Symbolically:

$$PE(r) = 0.6745 \left| \frac{1 Z r^2}{\sqrt{n}} \right|$$

Where,

PE(r) = Probable Error of r

r = Correlation coefficient between x and y

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

1. If the value of r is less than 6 times the probable error i.e.  $r < 6 \times PE(r)$ , there is no significant relationship between x and y.
2. If the value of r is more than 6 times the probable error i.e.  $r > 6 \times PE(r)$ , there is most significant relationship between x and y.
3. If  $PE(r) < r < 6PE(r)$ , nothing can be concluded.

In this study, probable error has been calculated to determine the reliability of the value of coefficient of EPS and DPS, EPS and MPS.

#### **vii. Regression Equation**

Regression analysis is concerned with the study of the relationship between dependent variable with independent variable. There are two types of regression analysis. One is called simple linear regression analysis, which is concerned with the study of the relationship between a dependent variable with a independent variable. Another is multiple linear regression analysis which is concerned with the study of the relationship between a dependent variable with more then one independent variable. The regression analysis consists of two concepts:

##### **a) Regression constant (a)**



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

**b) Regression Coefficient (b)**

The regression coefficient of each independent variable indicates the marginal relationship between that variable and value of dependent variable holding constant the effect of all other independent variable in the regression model. In other words, the coefficient describes how change in independent variable affects the value of dependent variable estimate.

**viii. Standard Error of Estimate (SEE)**

With the help of regression equations perfect prediction is practically impossible, so 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 value differ from their predicted value on the regression line. The smaller the value of SEE, the closer will be the dots to the regression line and the better the estimates based on the equation for this line. If SEE is zero, then there is no variation about the line and the correlation will be perfect. Thus with the help SEE, it is possible to ascertain how well and representative the regression line is as a description of the average relationship between two series.

**ix. t- Statistics**

To test the validity of our assumption, if sample size is less than 30, t-test is used. (Kothari: 1978).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' is less than the concerning table value of the 't', the difference is not treated as significant.

**3.6 Regression Model**

In this study the following simple and multiple regression has been used to analyze and test the relationship between dependent and independent variables. The simple regression is used to study, the particular one dependent and one independent variable relationship. The following linear regression equation has been applied in this study.

**1. Simple Regression Analysis**

a. $y = a+bx$  $y = \text{MPS of SCBL}$  $x = \text{EPS of SCBL}$  a is slope or intercept  b is regression coefficient	b. $y = a+bx$  $y = \text{MPS of NABIL}$  $x = \text{EPS of NABIL}$  a is slope or intercept  b is regression coefficient.
c. $y = a+bx$	d. $y = a+bx$

<p><math>y = \text{MPS of HBL}</math></p> <p><math>x = \text{EPS of HBL}</math></p> <p>a is slope or intercept</p> <p>b is regression coefficient</p>	<p><math>y = \text{MPS of NIBL}</math></p> <p><math>x = \text{EPS of NIBL}</math></p> <p>a is slope or intercept</p> <p>b is regression coefficient.</p>
<p>e. <math>y = a+bx</math></p> <p><math>y = \text{MPS of EBL}</math></p> <p><math>x = \text{EPS of EBL}</math></p> <p>a is slope or intercept</p> <p>b is regression coefficient.</p>	<p>f. <math>y = a+bx</math></p> <p><math>y = \text{DPS of SCBL}</math></p> <p><math>x = \text{EPS of SCBL}</math></p> <p>a is slope or intercept</p> <p>b is regression coefficient.</p>
<p>g. <math>y = a+bx</math></p> <p><math>y = \text{DPS of NABIL}</math></p> <p><math>x = \text{EPS of NABIL}</math></p> <p>a is slope or intercept</p> <p>b is regression coefficient.</p>	<p>h. <math>y = a+bx</math></p> <p><math>y = \text{DPS of HBL}</math></p> <p><math>x = \text{EPS of HBL}</math></p> <p>a is slope or intercept</p> <p>b is regression coefficient.</p>
<p>i. <math>y = a+bx</math></p> <p><math>y = \text{DPS of NIBL}</math></p> <p><math>x = \text{EPS of NIBL}</math></p> <p>a is slope or intercept</p> <p>b is regression coefficient.</p>	<p>j. <math>y = a+bx</math></p> <p><math>y = \text{DPS of EBL}</math></p> <p><math>x = \text{EPS of EBL}</math></p> <p>a is slope or intercept</p> <p>b is regression coefficient.</p>

## 2. Multiple Regression Analysis

The multiple regression use is as follows:

Regression Equation

$$P_t = a + b_1 D_{t-1} + b_2 E_t$$

Where,

$P_t$  = Market Price per Share at time 't'

$D_{t-1}$  = Dividend Per Share at time 't-1'

$E_t$  = Earning Per Share at time 't'

$a$  = Intercept or slope

$b_1$  and  $b_2$  = Regression coefficient

### 3.7 Test of Hypothesis of the Study

In common parlance, a hypothesis is a mere assumption or some supposition to be proved or disproved. But in a research study, a hypothesis is a formal question that researcher intends to resolve. Hypothesis is the most powerful tool man has invented to achieve dependable knowledge (Kerlinger: 1994). Hypothesis is usually considered as the principal instrument in research. So it should be good and supported by some evidence. And the hypothesis of this research work is as follows.

#### 1. First hypothesis:

Null Hypothesis ( $H_0$ ): There is no significant difference in EPS of SCBL, NABIL, HBL, NIBL and EBL

i.e.  $H_0: \sim_1 X \sim_2 X \sim_3 X \sim_4 X \sim_5$

Alternative Hypothesis ( $H_1$ ): There is significant difference in EPS of SCBL, NABIL, HBL, NIBL, and EBL

i.e.  $H_1: \sim_1 | \sim_2 | \sim_3 | \sim_4 | \sim_5$

#### 2. Second Hypothesis:

Null Hypothesis ( $H_0$ ): There is no significant difference in DPS of SCBL, NABIL, HBL, NIBL, and EBL,

i.e.  $H_0: \sim_1 X \sim_2 X \sim_3 X \sim_4 X \sim_5$

Alternative Hypothesis ( $H_1$ ): There is significant difference in DPS of SCBL, NABIL, HBL, NIBL, and EBL

i.e.  $H_1: \sim_1 | \sim_2 | \sim_3 | \sim_4 | \sim_5$

#### 3. Third Hypothesis

Null Hypothesis ( $H_0$ ): There is no significant difference in MPS of SCBL, NABIL, HBL, NIBL, and EBL,

i.e.  $H_0: \sim_1 X \sim_2 X \sim_3 X \sim_4 X \sim_5$

Alternative Hypothesis ( $H_1$ ): There is significant difference in MPS of SCBL, NABIL, HBL, NIBL, and EBL

i.e.  $H_1: \sim_1 | \sim_2 | \sim_3 | \sim_4 | \sim_5$

#### **4. Fourth Hypothesis**

Null Hypothesis ( $H_0$ ): There is no significant difference in DPR of SCBL, NABIL, HBL, NIBL, and EBL,

i.e.  $H_0: \sim_1 X \sim_2 X \sim_3 X \sim_4 X \sim_5$

Alternative Hypothesis ( $H_1$ ): There is significant difference in DPR of SCBL, NABIL, HBL, NIBL, and EBL

i.e.  $H_1: \sim_1 | \sim_2 | \sim_3 | \sim_4 | \sim_5$

## CHAPTER IV

# PRESENTATION AND ANALYSIS OF DATA

This chapter is based on the presentation and analysis of the secondary data which helps to conclude the study through major findings, issues and recommendation. For this purpose effect of earnings and dividends on market price of share is tried to analyze. To meet the objectives formulated in chapter I, the five banks of Nepal viz. SCBL, NABIL, HBL, NIBL and EBL has been taken in consideration.

### 4.1 Analysis of Financial Indicators and Variables

#### 4.1.1 Analysis of Earning Per Share (EPS)

Earning Per Share (EPS) is one of the most important financial indicators, which measure the earning capacity of a firm. Generally, the performance and achievement of business organization are measured in terms of their capacity to generate earning. The earning of any business organization also helps to evaluate performance, higher earning indicates the strength and lower earning indicates the weakness of business organization because the earning of any organization helps for its growth, expansion and modernizations.

The earning of the business unit is measured in terms of earning per share (EPS). The term EPS is widely used when there is a discussion of a company performance, or stock prices. EPS calculation will be helpful to know whether the earning power per share basis have changed over the period or not. EPS measures the profit available to the equity shareholders on per share basis that is the amount that they can get on every share hold. EPS is calculated by dividing net income available to the equity shareholders by the total number of common shares outstanding. Thus,

$$\text{EPS} = \frac{\text{Net Profit available to equity shareholders}}{\text{Number of ordinary shares outstanding}}$$

The following table shows the EPS of the sample banks:

**Table No.: 4.1****Analysis of EPS**

<b>Years/Bank</b>	<b>SCBL</b>	<b>NABIL</b>	<b>HBL</b>	<b>NIBL</b>	<b>EBL</b>
<b>2002</b>	141.13	55.25	60.26	33.60	32.91
<b>2003</b>	149.30	84.66	49.45	39.56	29.90
<b>2004</b>	143.55	92.61	49.05	51.70	45.58
<b>2005</b>	143.13	103.45	47.91	39.50	54.22
<b>2006</b>	175.84	129	59.24	59.35	62.78
<b>2007</b>	167.37	137	60.66	62.57	78.40
<b>2008</b>	131.92	108	62.74	57.87	91.82
<b>2009</b>	109.99	106.76	61.90	37.42	99.99
<b>2010</b>	77.65	78.61	31.80	52.55	100.16
<b>Average</b>	<b>137.76</b>	<b>99.48</b>	<b>53.66</b>	<b>48.23</b>	<b>66.19</b>
<b>S.D.</b>	<b>29.47</b>	<b>25.19</b>	<b>10.14</b>	<b>10.88</b>	<b>27.62</b>
<b>C.V. (%)</b>	<b>21.39</b>	<b>25.32</b>	<b>18.90</b>	<b>22.41</b>	<b>41.73</b>
<b>Average Mean</b>	<b>81.06</b>				
<b>Average S.D.</b>	<b>19.25</b>				
<b>Average C.V. (%)</b>	<b>25.91</b>				

*(Source: Annual Reports of the Companies [2002-2010])*

The above table presents the EPS of five banks for the period of nine years (2002-2010). It shows that EPS of SCBL is increasing from Rs.141.13 to Rs.149.30 from year 2002 to 2003 decrease to 143.13 in 2005, increase to Rs.175.84 in 2006 and again decrease to Rs.77.65 in year 2010. While EPS of NABIL increase from Rs.55.25 to Rs.137.00 from 2002 to 2007 and decreased up to Rs.106.76 from 2008 to 2009 and decrease in 2010. Likewise, EPS of HBL decreased to Rs.47.91 in 2005 and increased up to Rs.62.74 from 2006 to 2008, after that decreased from Rs.61.91 to Rs.31.80 from year 2009 to 2010. Similarly, EPS of NIBL is in fluctuating trend. EPS increases from Rs.33.62 to Rs.51.70 in 2002 to 2004, fluctuating in following years as EPS are Rs.39, Rs.50, Rs.59.35, Rs.62.57 and Rs.57.87. And EPS of EBL is in fluctuating trend in previous four year i.e. up to 2003 but increased from Rs.29.90 to Rs.91.82 in year 2003 to 2010.

Average earning per share of SCBL, NABIL, HBL, NIBL and EBL banks are Rs.137.76, Rs.99.48, Rs.53.66, Rs.48.23 and Rs.66.19 respectively. It shows that the highest mean EPS is of SCBL and lowest is of NIBL.

Likewise, the coefficient of variation (C.V) of EPS of SCBL, NABIL, HBL, NIBL and EBL are 21.39%, 25.32%, 18.90%, 22.41% and 41.73% respectively. It shows that the variability of HBL is least among other banks and highest variability is EBL among the sample banks.

According to aggregate analysis, industry average of EPS of sample banks is Rs.81.06. Cross-section analysis shows that SCBL is always above the industry average EPS except year 2010. NABIL is above the industry average except year 2002 and 2010. HBL is below industry average in all the periods. NIBL is below industry average in all the periods. And EBL is below industry average in all the periods except year 2008, 2009 and 2010. While, average EPS of SCBL, NABIL, HBL, NIBL and EBL are Rs.137.76, Rs.99.48, Rs.53.66, Rs.48.23 and Rs.66.19 respectively. Comparing the overall performance of selected banks in respect to EPS, SCBL and NABIL have been found to maintain its average EPS above the industry average while HBL, NIBL and EBL have their average EPS below the industry average. It indicates that the SCBL and NABIL'S profitability of common stockholders investment is better than other banks among sample banks.

#### 4.1.2 Analysis of Dividend Per Share (DPS)

Out of total earning the amount paid to the shareholders on per share basis is known as Dividend Per Share (DPS). In other words, DPS is the net distributed profit to each shareholder. DPS is calculated by dividing the total dividend paid to ordinary shareholders by total number of ordinary shares outstanding. Thus,

$$\text{DPS} = \frac{\text{Total Dividend Paid}}{\text{Total Number of Ordinary Shares Outstanding}}$$

The following table shows the DPS of the sample banks:

**Table No.: 4.2**

##### Analysis of DPS

<b>Years/Bank</b>	<b>SCBL</b>	<b>NABIL</b>	<b>HBL</b>	<b>NIBL</b>	<b>EBL</b>
<b>2002</b>	100	30	25	0	0
<b>2003</b>	110	50	1.32	20	20
<b>2004</b>	110	65	20	15	20
<b>2005</b>	120	70	20	12.50	0
<b>2006</b>	130	85	31.58	20	25
<b>2007</b>	80	140	35	5	10
<b>2008</b>	80	100	40	7.5	20
<b>2009</b>	50	85	43.56	20	30
<b>2010</b>	55	70	36.84	25	30
<b>Average</b>	<b>92.77</b>	<b>77.22</b>	<b>28.14</b>	<b>13.88</b>	<b>17.22</b>
<b>S.D.</b>	<b>28.18</b>	<b>31.23</b>	<b>13.10</b>	<b>8.30</b>	<b>11.48</b>
<b>C.V. (%)</b>	<b>30.38</b>	<b>40.44</b>	<b>46.57</b>	<b>59.77</b>	<b>66.69</b>
<b>Average Mean</b>	<b>45.84</b>				
<b>Average S.D.</b>	<b>18.45</b>				
<b>Average C.V. (%)</b>	<b>48.77</b>				

*(Source: Annual Reports of the Companies [2002-2010])*

The above table presents the DPS of five banks for the period of nine years (2002 to 2010). It shows that highest dividend paid is Rs.140 in year 2007 by NABIL among all the study of sample banks. The trend shows increasing DPS from 2002 to 2006 but decreases from year



2007 to 2010 in case of SCBL. While DPS of NABIL is increased in 2002 to 2007; but decreases in year 2008 to 2010. Likewise, DPS of HBL decrease up to year 2003 and then increase in following years. Similarly, DPS of NIBL is in fluctuating trend and EBL has not paid dividend in first years and fluctuating in following years.

Average dividend per share of SCBL, NABIL, HBL, NIBL and EBL bank are RS.92.77, Rs.77.22, Rs.28.14, Rs.13.88 and Rs.17.22 respectively. It shows that the highest mean DPS is of SCBL and lowest is of NIBL. Likewise the coefficient of variation (C.V.) of SCBL, NABIL, HBL, NIBL and EBL are 30.38%, 40.44%, 46.57%, 59.77% and 66.69% respectively. It shows that the variability of SCBL is least and of EBL is highest among the sample banks. Hence, the analysis of the DPS trends shows that average DPS paid by SBL is greater than other four banks.

Higher DPS creates positive attitude of the shareholders towards the bank, which consequently helps to increase the market price of the stock of the concerted banks. It is the indicator of the better performance of the firm. General people think that if company earned higher profit they can distribute higher dividends. In this regard, SCBL is better then other four banks as SCBL's average DPS is highest and its C.V. is least among all banks. And DPS of NIBL and EBL is fluctuating, it may be due to the fact that they paid stock dividend (bonus shares) in that year when do not paid cash dividend. Also, low dividend paid by NABIL and HBL may due to the same reason above i.e. paid stock dividend.

According to aggregate analysis industry average of DPS of sample banks is Rs.45.84. Cross-section analysis shows that SCBL is always above the industry average DPS. NABIL is above industry average in except year 2002. HBL is below industry average. And NIBL and EBL is below industry average in all the periods. While average DPS of SCBL, NABIL, HBL, NIBL and EBL are Rs.92.77, Rs.77.22, Rs.28.14, Rs.13.88 and Rs.17.22 respectively. Comparing the overall performance of selected banks in respect to DPS SCBL and NABIL have been found to maintain its average DPS above the industry average, while HBL, NIBL and EBL have their average DPS below the industry average.

It indicates that SCBL and NABIL pays higher dividend as compared to other banks among the sample banks.

#### **4.1.3. Analysis of Market Price per Share (MPS)**

Market Price per Share (MPS) refers to the value paid to a share of the firm of the investor in the stock market. MPS is determined in the stock market on the basis of demand and supply interaction of a specific share in stock market. In this study MPS represents the closing market price of NEPSE index of the sample firms.

The following table shows the market price per share of the sample banks:

**Table no.: 4.3****Analysis of MPS**

<b>Years/Banks</b>	<b>SCBL</b>	<b>NABIL</b>	<b>HBL</b>	<b>NIBL</b>	<b>EBL</b>
<b>2002</b>	1550	735	1000	760	430
<b>2003</b>	1640	735	836	795	445
<b>2004</b>	1745	1000	840	940	680
<b>2005</b>	2345	1505	920	800	870
<b>2006</b>	3775	2240	1100	1260	1379
<b>2007</b>	5900	5050	1740	1729	2430
<b>2008</b>	6830	5275	1980	2450	3132
<b>2009</b>	6010	4899	1760	1388	2455
<b>2010</b>	3279	2384	816	705	1630
<b>Average</b>	<b>3674.88</b>	<b>2647</b>	<b>1221.33</b>	<b>1203.00</b>	<b>1494.55</b>
<b>S.D.</b>	<b>2081.89</b>	<b>1914.26</b>	<b>467.36</b>	<b>582.17</b>	<b>987.34</b>
<b>C.V. (%)</b>	<b>56.65</b>	<b>72.31</b>	<b>38.26</b>	<b>48.39</b>	<b>66.06</b>
<b>Average Mean</b>	<b>2048.15</b>				
<b>Average S.D.</b>	<b>1206.60</b>				
<b>Average C.V. (%)</b>	<b>56.33</b>				

*(Source: Annual Reports of the Companies [2002-2010])*

The above table presents the MPS of five banks for the period of nine years (2002 to 2010). It shows that MPS of SCBL, NABIL, NIBL and EBL increased up to year 2008 and decreases in following year. But MPS of HBL increased up to 2008 and decreased from 2009. Minimum price paid per share of SCBL, NABIL, HBL, NIBL and EBL are Rs.1550, Rs.735, Rs.816, Rs.705, and Rs.430 respectively. These price are noted on year 2002/2003/2010. Maximum MPS of SCBL, NABIL, HBL, NIBL and EBL has been observed in year 2008 are Rs.6830, Rs.5275, Rs.1980, Rs.2450 and Rs.3132 respectively.

Average market Price per share of SCBL is Rs.3674.88, NABIL is Rs.2647, HBL is Rs.1221.33, NIBL is Rs.1203.00 and EBL is Rs.1294.55. It reveals that the mean MPS of SCBL is greater than often four banks. Likewise the coefficient of variation (C.V.) of SCBL, NABIL, HBL, NIBL and EBL are 56.65%, 72.31%, 38.26%, 48.39% and 66.06% respectively. It indicates that there is lowest variability in HBL among five sample banks. Hence, the analysis of the MPS trend shows that average market price per share paid to SCBL is greater than other four banks. Higher market price per share creates positive attitude of the investors towards the bank, which consequently attracts investors to invest in such high valued shares.

According to aggregate analysis, industry average of MPS five sample banks is Rs.2048.15. Cross-section analysis shows that SCBL is always above the industry average MPS except in the year 2002, 2003 and 2004. NABIL is below the industry average in the year 2002 to 2005 and above from 2006 to 2010. HBL and NIBL are below the industry average in all the periods except in the year 2008. And EBL is below the industry average in all the periods except in the year 2007, 2008 and 2009. While averages mean of SCBL, NABIL, HBL, NIBL

and EBL are Rs.3674.88, Rs.2647, Rs.1221.33, Rs.1203.00 and Rs.1494.55 respectively. Comparing the overall performance of selected banks in respect to MPS, SCBL and NABIL have been found to maintain its average MPS above the industry average while, HBL, NIBL and EBL have their average mean MPS below the industry average. It indicates that the more investors are attracted towards SCBL and NABIL as then market price per share is higher in comparison to other three sample banks. High market price secures the investors of their investment to be safe and less risky. Where as a low rate market price of a share always indicates chance of riskless and losing of invested amount and profit it posses in near future.

#### 4.1.4 Analysis of Dividend Payout Ratio (D/P Ratio)

Dividend Payout ratio (D/P Ratio) indicates the percentage of earnings receiving by the ordinary shareholders. D/P ratio shows much earning is distributed as dividend and what percent have been retain to finance the growth of the company. The amount of dividend that a company pays depends upon the earning capacity of the firm. Greater earning enhances the ability to pay more dividends and vice-versa. It is calculated as dividing the dividend per share by earning per share i.e.:

$$\text{D/P ratio} = \frac{\text{Dividend Per Share (DPS)}}{\text{Earning Per Share (EPS)}}$$

The following table shows the dividend payout ratio of the sample banks.

**Table No.: 4.4**

#### Analysis of D/P Ratio (DPR)

Years/Banks	SCBL	NABIL	HBL	NIBL	EBL
<b>2002</b>	70.85	54.29	41.48	0	0
<b>2003</b>	73.67	59.06	2.66	50.56	66.89
<b>2004</b>	76.62	70.19	40.77	29.01	43.88
<b>2005</b>	83.84	67.67	41.74	31.80	0
<b>2006</b>	73.93	65.89	53.31	33.70	39.82
<b>2007</b>	47.80	102.19	57.70	8	12.76
<b>2008</b>	60.64	92.59	63.76	12.96	21.78
<b>2009</b>	45.45	79.62	70.37	54.44	30.00
<b>2010</b>	70.83	89.04	115.84	47.57	29.95
<b>Average</b>	<b>67.07</b>	<b>75.61</b>	<b>54.18</b>	<b>29.78</b>	<b>27.23</b>
<b>S.D.</b>	<b>13.09</b>	<b>16.22</b>	<b>30.24</b>	<b>19.43</b>	<b>21.63</b>
<b>C.V. (%)</b>	<b>19.52</b>	<b>21.46</b>	<b>55.82</b>	<b>65.24</b>	<b>79.46</b>
<b>Average Mean</b>	<b>50.77</b>				
<b>Average S.D.</b>	<b>20.12</b>				
<b>Average C.V. (%)</b>	<b>48.30</b>				

*(Source: Annual Reports of the companies [2002-2010])*

The above table presents the DPR of five banks for the period of nine years (2002-2010). It shows that SCBL has DPR ranging from 45.45% to 83.84%. The average DPR, S.D. and C.V.

are 67.07%, 13.09% and 19.52% respectively. C.V. of 19.52% indicates that there is 19.52% fluctuation in DPR of the banks during the study period.

Similarly, the DPR of NABIL ranging from 54.29% to 102.19%. The average DPR, S.D. and C.V. are 75.62%, 16.22% and 21.46% respectively. C.V. of 21.46% indicates that there is 21.46% fluctuation in DPR of the bank during the study period.

While the DPR of HBL ranging from 2.66% to 115.84%. The average DPR, S.D. and C.V. are 54.18%, 30.24% and 55.82% respectively. C.V. of 55.82% indicates that there is 55.82% fluctuation in DPR of the bank during the study period.

Likewise, the DPR of NIBL ranging from 0% to 54.44%. NIBL has not declared any dividend in 2002. The average DPR, S.D. and C.V. are 29.78%, 19.43% and 65.24% respectively. C.V. of 65.24% indicates that there is 65.24% fluctuation in DPR of the bank during the study period. And, the DPR of EBL ranging from 0% to 66.89% EBL has not declared any dividend in 2002 and 2005. The average DPR, S.D. and C.V. of EBL are 27.23%, 21.63% and 79.46% respectively. C.V. of 79.46% indicates that there is very high fluctuation in DPR during the study period.

Cross-section analysis shows that SCBL's DPR is always above the industry average DPR except year 2007 and 2009. NABIL's DPR is also above the industry average in all periods. HBL's DPR is above industry average during the year 2006, 2007, 2008, 2009 and 2010. NIBL's DPR is below industry average except in the year 2003 and 2009. And EBL's DPR is below industry average in all the periods except in the year 2003.

In conclusion, there is lowest fluctuation of DPR in SCBL as depicted by C.V. of 19.52%, where as highest fluctuation in EBL as depicted by C.V. of 79.46%. Rest three banks, NABIL, HBL and NIBL lies between two extremes. There may be considerable impacts on MPS of these banks due to such DPR fluctuation position. Going through the facts, it has been cleared that Nepalese commercial banks are not paying stable dividend. And it proves to the saying "Nepalese Companies including commercial banks have paid dividend haphazardly".

#### **4.1.5. Analysis of Price Earning Ratio (P/E Ratio)**

Price Earning Ratio (P/E Ratio) is concerned with the relationship of the market value per share to earning per share. It is closely related to the earning yield earning price ratio. The P/E ratio reflects the price currently being paid by the market for each rupee of currently reported EPS. The analysis of P/E ratio helps to judge the investors expectations about the banks performance and also market appraisal to the banks performance. Higher P/E ratio shows the better performance of the banks and vice-versa. Hence, higher P/E ratio is regarded as better for both the banks and shareholders. It is calculated by dividing the market value per share by earning per share i.e.

P/E ratio =

The following table shows the price earning ratio of the sample banks:

**Table No.: 4.5****Analysis of P/E Ratio (PER)**

<b>Years/Bank</b>	<b>SCBL</b>	<b>NABIL</b>	<b>HBL</b>	<b>NIBL</b>	<b>EBL</b>
<b>2002</b>	10.98	13.30	16.59	22.62	13.06
<b>2003</b>	10.98	8.68	16.90	20.09	14.88
<b>2004</b>	12.15	10.79	17.12	18.18	14.91
<b>2005</b>	16.38	14.55	19.20	20.25	16.05
<b>2006</b>	21.47	17.34	18.57	21.23	21.97
<b>2007</b>	35.25	36.84	28.69	27.63	30.99
<b>2008</b>	51.77	48.84	31.56	42.34	34.11
<b>2009</b>	54.64	45.88	28.43	37.09	24.55
<b>2010</b>	42.22	30.32	25.66	13.41	16.27
<b>Average</b>	28.42	25.17	22.52	24.76	20.75
<b>S.D.</b>	17.80	14.59	5.99	9.35	7.65
<b>C.V. (%)</b>	62.63	61.95	26.59	37.79	36.89
<b>Average Mean</b>	24.32				
<b>Average S.D.</b>	11.28				
<b>Average C.V. (%)</b>	45.17				

*(Source: Annual Reports of the companies [2002-2010])*

The above table presents the P/E ratio of SCBL, NABIL, HBL, NIBL and EBL. The P/E ratio of SCBL lies from 10.98 times to 54.64 times. Similarly, the averages mean, S.D. and C.V. of PER are 28.42 times, 17.80 times and 62.63% respectively. It reveals that 62.63% fluctuation in PER of SCBL during the study period.

Likewise, NABIL's PER lies between 8.68 times to 48.84 times. The average mean, S.D. and C.V. of PER are 25.17 times, 14.59 times and 61.95% respectively. It reveals that 61.95% fluctuation in PER of NABIL during the study period.

While, HBL's PER lies between 16.59 times to 31.56 times. The average means, S.D. and C.V. of PER are 22.52 times, 5.99 times and 26.59% respectively. It reveals that 26.59% fluctuation in PER of HBL during the study period.

Similarly, NIBL's PER lies between 18.18 times to 42.34 times. The averages mean, S.D. and C.V. of PER are 24.76 times, 9.35 times and 37.79% respectively. It reveals that 37.79% fluctuation in PER of NIBL during the study period.

And, EBL's PER lies between 13.06 times to 34.11 times. The averages mean, S.D. and C.V. of PER are 20.75 times, 7.65 times and 36.89% respectively. It reveals that 36.89% fluctuation in PER of the EBL during the study period.

On going to the corporative analysis of PER figures of the above sample banks, the mean PER of SCBL is the highest i.e. 28.42 and EBL is lowest i.e. 20.75 times. However, the fluctuation

of PER of SCBL is highest as compared to other banks as depicted by C.V. and HBL has the lowest fluctuation. Whereas rest other three banks fall between these two extreme ranges. But in developed countries, PER of good performance banks is around 15 times. So, in Nepalese context, PER range could be within 15 to 25 times and average PER of all five sample banks lies between 15 to 25 times ranges. But PER of all five banks is rising since 2002/03. And HBL has the lowest fluctuation in the price currently paid by the market for each rupee of reported earning per share. The SCBL has the highest fluctuation in this regard.

Cross- section analyses shows that SCBL is able to meet industry average P/E ratio in the year 2007 to 2010. NABIL is able to meet industry average in the year 2007 to 2010. HBL is able to meet industry average in the year 2007 to 2010. NIBL is unable to meet industry average in the year 2003, 2004, 2005, 2006 and 2010. And EBL is able to meet industry average in the year 2007, 2008 and 2009.

#### **4.1.6. Analysis of Earning Yield Ratio (EYR)**

The inverse of a P/E ratio is called an earning yield. This ratio significantly influences the market value per share because a small change in EPS brings effective change in the market value of the share. The main reason being such kind of tabulation is to point out the percentage relationship between EPS and MPS, so as to illustrate the earning yield of concerned banks, which may be reliable tool to calculate the real value of the earning as compared with the current market value of each share. It is calculated by dividing the earning per share by the market price of the share. Thus,

Earning yield ratio =

The following table shows the earning yield ratio of sample banks:

**Table No: 4.6****Analysis of Earning Yield Ratio***(All figures in %)*

<b>Years/Bank</b>	<b>SCBL</b>	<b>NABIL</b>	<b>HBL</b>	<b>NIBL</b>	<b>EBL</b>
<b>2002</b>	9.10	7.51	6.02	4.42	7.65
<b>2003</b>	9.10	11.51	5.92	4.97	6.72
<b>2004</b>	8.23	9.26	5.84	5.50	6.70
<b>2005</b>	6.14	6.87	5.21	4.94	6.23
<b>2006</b>	4.66	5.76	5.39	4.71	4.55
<b>2007</b>	2.84	2.71	3.49	3.62	3.23
<b>2008</b>	1.93	2.05	3.17	2.36	2.93
<b>2009</b>	1.83	2.17	3.51	2.69	4.07
<b>2010</b>	2.36	3.29	3.80	7.45	6.14
<b>Average</b>	5.13	5.68	4.70	4.51	5.35
<b>S.D.</b>	3.09	3.38	1.18	1.53	1.69
<b>C.V. (%)</b>	60.22	59.56	25.25	33.92	31.65
<b>Average Mean</b>	5.07				
<b>Average S.D.</b>	2.17				
<b>Average C.V. (%)</b>	42.12				

*(Source: Annual Report of the Companies [2002-2010])*

Above table shows that NABIL has the highest earning yield 11.51% and SCBL has the lowest earning yield 1.93%. Earning yield of SCBL and EBL was highest in year 2002 and then decreased in future years. Earning yield of NABIL and NIBL is in fluctuating trend. But earning yield of HBL is increased in 2002 and then decreased in further years.

On average, the earning yield of NABIL ranks the highest (5.68%) while the earning yield of NIBL ranks the lowest (4.51%) and other three banks lies between these two extremes. Similarly, the C.V. of earning yield of SCBL, NABIL, HBL, NIBL and EBL are 60.22%, 59.56%, 25.25%, 33.92% and 31.65% respectively. Hence, there s lowest variations in earning yield of HBL as depicted by its C.V. (25.25%). But there exists highest variation in earning yield of SCBL as depicted by its C.V. (60.22%).

Cross- section analysis shows that SCBL's EYR is above the industry average EYR except in the last four year 2006 to 2010. NABIL's EYR is also above the industry average except in the year 2007 to 2010. HBL is unable to meet the industry average in the year 2005, 2007, 2008, 2009 and 2010. NIBL is unable to meet the industry average from year 2005 to 2009 except year 2010. And EBL is able to meet the industry average in year 2002 to 2005 and 2010.

#### 4.1.7. Analysis of Dividend Yield Ratio (DYR)

A ratio between dividend per share (DPS) to market value per share (MPS) is known as dividend yield ratio. It's evaluated the shareholder's return in relation to the market value of share. This ratio significantly influences the market value per share because a small change in DPS brings effective change in the market value of the share. So, before allocation of dividend to stockholder, the impact of market scenario and price fluctuation has to be analyzed and evaluated for the long run survival of the company. This ratio can be computed by following formula,

Dividend Yield Ratio (DYR) =

The following table shows the dividend yield ratio of sample banks:

**Table No: 4.7**

#### **Analysis of Dividend Yield Ratio (DYR)**

*(All figures in %)*

<b>Years/Bank</b>	<b>SCBL</b>	<b>NABIL</b>	<b>HBL</b>	<b>NIBL</b>	<b>EBL</b>
<b>2002</b>	6.45	4.08	2.50	0	0
<b>2003</b>	6.70	6.80	0.16	2.52	4.49
<b>2004</b>	6.30	6.50	2.38	1.60	2.94
<b>2005</b>	5.11	4.54	2.17	1.56	0
<b>2006</b>	3.44	3.79	2.87	1.59	1.81
<b>2007</b>	1.36	2.77	2.01	0.29	0.41
<b>2008</b>	1.17	1.90	2.02	0.31	0.64
<b>2009</b>	0.83	1.73	2.47	1.22	1.22
<b>2010</b>	1.67	2.93	4.51	1.84	1.84
<b>Average</b>	3.67	3.89	2.34	1.21	1.48
<b>S.D.</b>	2.49	1.82	1.19	0.84	1.48
<b>C.V. (%)</b>	67.84	46.79	47.77	69.21	100.35
<b>Average Mean</b>	2.52				
<b>Average S.D.</b>	1.55				
<b>Average C.V. (%)</b>	66.39				

*(Source: Annual Report of the Companies [2002-2010])*

The mean, S.D. and C.V. of DYR concerning to SCBL is 3.67%, 2.49% and 67.84% respectively. The DYR ranges from 0.83% to 6.70%. The C.V. of 67.84% indicates that there is 67.84% variation in DYR of the banks during the study period.

Likewise, NABIL's DYR lies between 1.73% to 6.80%. The mean, S.D. and S.V. of DYR of NABIL is 3.89%, 1.82% and 46.79% respectively. It indicates that there is 46.79% fluctuation in DYR of the bank during the study period.



Similarly, HBL's DYR lies between 0.16% to 4.51%. The mean, S.D. and C.V. of DYR of HBL is 2.34%, 1.19% and 47.77% respectively. It indicates that there is 47.77% fluctuation in DYR of the bank during the study period.

While, NIBL's DYR lies between 0% to 2.52%. The mean, S.D. and C.V. of DYR of NIBL is 1.21%, 0.84% and 69.21% respectively. It indicates that there is 69.21% fluctuation in DYR of the bank during the study period.

And, in case of EBL, DYR lies between 0% to 4.49%. The Mean, S.D. and C.V. of DYR is 1.48%, 1.48% and 100.35% respectively. EBL has higher variation in DYR as compared to other banks as depicted by C.V.

Cross- section analysis shows that SCBL's EYR is above the industry average EYR except in the last four year 2007 to 2010. NABIL's EYR is also above the industry average except in the year 2008 and 2009. HBL is unable to meet the industry average all the year except year 2006 and 2010. NIBL is unable to meet the industry average in all the study periods except year 2003. And EBL is able to meet the industry average in year 2003 and 2004.

In totality, NABIL has the highest average i.e. 3.89% DYR and seems to efficient in terms of distribution of dividend on the basis of average DYR, NIBL has the lowest average i.e. 1.21 in this regard and rest three sample banks fall between these two extreme ranges.

## 4.2. Analysis of Statistical Indicators

### 4.2.1. Correlation Analysis

Correlation analysis is the statistical tool that can be used to describe the degree to which one variable is linearly related to another. In other words, correlation analysis refers to the technique used in measuring the closeness of the relationship between the variables. Thus, the coefficient of correlation measures the degree of relationship between two set of figures. Correlation can either be positive or negative. If both variables are changing in the same direction, the correlation is said to be positive and when the two correlation is said to be positive and when the two variables changes in opposite direction, the correlation is said to be negative. Is also indicates whether the relationship is significant or insignificant and in this study, the correlation analysis is used to identify the relationship between EPS and MPS, EPS and DPS and whether the relationship is significant or not.

**Table no. 4.8**

**Correlation between EPS and MPS**

Bank	Correlation Coefficient	Relationship	Coefficient of Determination (R <sup>2</sup> )	Probable Error	Significant Insignificant
SCBL	0.0789	Negative	0.006225	0.2241	-
NABIL	0.6274	Positive	0.003931	0.1750	-
HBL	0.7061	Positive	0.498718	0.1592	-
NIBL	0.5693	Positive	0.323989	0.1848	-
EBL	0.8643	Positive	0.680955	0.1130	Significant

The above table explains the relationship between market price of stock and earning per share. The coefficient of correlation between EPS and MPS of SCBL, NABIL, HBL, NIBL and EBL are 0.0789, 0.6274, 0.7061, 0.5693 and 0.8643 respectively. This figures clearly implies that SCBL has low degree of negative correlation, NIBL has moderate degree and EBL, HBL and NABIL has high degree of positive correlation.

The coefficient of determination ( $R^2$ ) being 0.006225, 0.003931, 0.498718, 0.323989 and 0.680955 in case of SCBL, NABIL, HBL, NIBL and EBL indicates that variation in EPS explains 0.62%, 0.39%, 49.87%, 32.39% and 68.09% variation in MPS respectively and remaining percentage is due to factors other than EPS.

So far as significant relationship is concerned, coefficient of correlation ( $r$ ) is greater than 6P.E. but less than P.E. in case of SCBL, NABIL, HBL and NIBL i.e.,  $P.E. < r < 6P.E.$ , nothing can be concluded about the significance of the relationship between market price of stock and earning per share. Hence, we conclude that increase or decrease in stock price is not totally dependent on earning per share that is earning does not actually determine the stock price. But, incase of EBL, coefficient of correlation is greater than 6P.E. i.e.  $r > 6P.E.$  So, the relationship between EPS and MPS is significant. Hence, we conclude that earning determines the stock price of EBL.

**Table no. 4.9**

**Correlation between EPS and DPS**

Bank	Correlation Coefficient	Relationship	Coefficient of Determination ( $R^2$ )	Probable Error	Significant Insignificant
SCBL	0.7584	Positive	0.575171	0.1465	-
NABIL	0.8788	Positive	0.772289	0.1071	Significant
HBL	0.2708	Positive	0.073233	0.2164	-
NIBL	0.0376	Positive	0.001414	0.2246	-
EBL	0.5686	Positive	0.323306	0.1849	-

The above table explains the relationship between EPS and DPS of five concerned banks. The coefficient of correlation between EPS and DPS of SCBL, NABIL, HBL, NIBL and EBL are 0.7584, 0.8788, 0.2708, 0.0376 and 0.5686 respectively. This figure clearly implies that HBL, NIBL and EBL have low degree of positive correlation, SCBL has moderate degree and NABIL has higher degree of positive correlation.

The coefficient of determination ( $R^2$ ) is a measure of degree of linear association or correlation between two variables. The coefficient of determination between EPS and DPS of SCBL is 0.575171, which means that 57.51% of total variation in DPS is due to the EPS and remaining is due to the other factors. Similarly,  $R^2$  of NABIL, HBL, NIBL and EBL are 0.772289, 0.073233, 0.001414 and 0.323306 respectively which indicates that 77.22%, 7.32%, 0.14% and 32.33% of the total variation in DPS of NABIL, HBL, NIBL and EBL is due to the EPS of respective banks and remaining is due to other factors. So, we can conclude that only 0.14% of variation in DPS is due to the EPS in case of NIBL which is the lowest among sample banks and 77.22% of variation in DPS is due to the EPS in case of SCBL which is the highest among sample banks.

The significance of the relationship between EPS and DPS is measured by calculating probable error of correlation coefficient. So far as significant relationship is concerned, coefficient of correlation ( $r$ ) is greater than PE but less than  $6PE$  i.e.  $PE < r < 6PE$  in case of SCBL, HBL, NABIL and EBL, so nothing can be concluded about the significance of relationship between earning per share and dividend per share. But in case of SCBL, coefficient of correlation is greater than  $6PE$  i.e.  $r > 6PE$ , hence, the relationship between EPS and DPS is significant. Thus, we conclude that dividend is dependent on earning per share that is earning determines the dividend in case of NABIL, but in case SCBL, HBL, NIBL and EBL, nothing can be concluded about the significance of the relationship between dividend and earning. Hence, we conclude that increase decrease in dividend is not totally dependent on earning.

#### **4.2.2 Simple Regression Analysis**

Regression analysis is concerned with the study of the relationship between dependent variable with independent variables. And simple regression analysis is used as a tool of determining the nature and the strength of relationship between two variables. Thus, regression analysis is shown how the variables are related. Regression line are expressed in terms of algebraic relation i.e.

$$y = a + bx$$

'y' is dependent variable and 'x' is independent variable. Similarly, 'a' is the intercept of the model, which indicates when independent variable is zero. Likewise, regression coefficient 'b' describes how change in independent variable affects the value of dependent variable. Coefficient of multiple determinations ( $R^2$ ) measures the percentage of total variation in dependent variable explained by independent variable. But, with the help of regression equation, perfect prediction is practically impossible so, standard error of estimate (SEE) measures the accuracy of estimated figures. To test the validity of our assumption, if the sample size ( $n$ ) is less than 30, t-test is used. If the calculated value of 't' exceeds the table value (5% level of significance), we infer that the difference is significant at 5% of significance. But, if 't' is less than the concerned table value the difference is not treated as significant.

#### **A. Simple Regression Analysis of MPS and EPS.**

Under statement, table presents the usual simple linear relationship between earning per share and market price of stock, earning pre share and dividend per share. Simple regression analysis of MPS and EPS is made to analyze the relationship between MPS and EPS and product that effect in MPS by variation in EPS. The major outputs of simple regression model of the sample banks based on data are given below:

Simple regression results between EPS and MPS =  $a + b$  (EPS)

**Table no. 4.10**

**Simple Regression Analysis**

<b>Bank</b>	<b>Sample</b>	<b>Constant (a)</b>	<b>Regression Coefficient (b)</b>	<b>Standard Error of Estimate (SEE)</b>	<b>R<sup>2</sup></b>	<b>r</b>	<b>t-value</b>
<b>SCBL</b>	9	4442.54	-5.57	2388.99	0.006225	0.0789	0.2094
<b>NABIL</b>	9	-2029.93	47.66	1721.97	0.003931	0.6274	2.1316
<b>HBL</b>	9	-523.85	32.51	383.24	0.498718	0.7061	2.6382
<b>NIBL</b>	9	-275.79	30.65	551.77	0.323989	0.5693	1.8321
<b>EBL</b>	9	-550.14	30.88	574.71	0.680955	0.8643	4.5463

*(Source: Appendix II)*

Above mentioned table shows the regression results between market price per share and earning per share of SCBL, NABIL, HBL, NIBL and EBL. The beta coefficient (b) of SCBL, NABIL, HBL, NIBL and EBL are -5.57, 47.66, 32.51, 30.65 and 30.88 respectively. Incase of SCBL, beta coefficient (b) -5.57 indicates that one rupee increase in EPS leads to an average of about Rs.5.57 decrease in MPS, holding other variable constant. Incase of NABIL, beta coefficient (b) 47.66 indicates that one rupee increase in EPS leads to an average of about Rs. 47.66 increase in MPS, holding other variable constant. Similarly, incase of HBL, beta coefficient (b) 32.51 indicates that one rupee increase in EPS leads to an average of about Rs. 32.51 increase in MPS, holding other variables constant.

Likewise, beta coefficient (b) of NIBL 30.65 indicates that one rupee increase in EPS leads to an average of about Rs. 30.65 increase in MPS, holding other variable constant. And beta coefficient (b) of EBL 30.88 indicates that one rupee increase in EPS leads to an average of about Rs. 30.88 increase in MPS, holding other variable constant. From above calculation, we can conclude that if one rupee of EPS increase among five banks at the same time, NABIL's MPS will increase higher than that of other four banks. It might be concluded that if one rupee increase in EPS among five companies at the same time, MPS of NABIL will increase higher than rest of the companies.

The intercept coefficient (a) of SCBL, NABIL, HBL, NIBL and EBL are 4442.54, -2029.93, -523.85, -275.79 and -550.14 respectively, which shows that the average MPS would be Rs. 4442.54, Rs.2029.93, Rs.523.85, Rs.275.79 and Rs.550.14 respectively if EPS were zero.

Incase of SCBL, the coefficient of determination ( $R^2$ ) is 0.006225 which indicates that 0.62% of the variation of MPS is explained by explanatory variable EPS. The remaining 99.38% variation is due to other factors. The simple correlation coefficient (r) between MPS and EPS is 0.0789 which indicates that relationship between MPS and EPS is positively correlated. The calculated value of 't' is 0.2094 which is less than tabulated value 2.3646, which is not statistically significant at 5% level of significance and it can be concluded that the variables are uncorrelated in the population.

Incase of NABIL, the coefficient of determination ( $R^2$ ) is 0.003931 which indicates that 0.39% of the variation of MPS is explained by explanatory variable EPS. The remaining 99.61% variation is due to other factors. The simple correlation coefficient (r) between MPS

and EPS is 0.6274 which indicates that MPS and EPS is positively correlated. The calculated value of 't' is 2.1316 which is less than tabulated value 2.3646, which is not statistically significant at 5% level of significance, and it can be inferred that variables are uncorrelated in the population.

Incase of HBL, the coefficient of determination ( $R^2$ ) is 0.498718 which indicates that 49.87% of the variation of MPS is explained by explanatory variable EPS. The remaining 50.13% variation is due to other factors. The simple correlation coefficient (r) between MPS and EPS is 0.7061 which indicates that MPS and EPS is positively correlated. The calculated value of 't' is 2.6382 which is greater than tabulated value 2.3646 which is statistically significant at 5% level of significance i.e. EPS has effect on MPS or the variables are correlated in the population.

Incase of NIBL, the coefficient of determination ( $R^2$ ) is 0.323989 which indicates that 32.39% of the variation of MPS is explained by explanatory variable EPS. The remaining 67.61% variation is due to other factors. The simple correlation coefficient (r) between MPS and EPS is 0.5693 which indicates that MPS and EPS are positively correlated. The calculated value of 't' is 1.8321 which is smaller than tabulated value 2.3646 which is statistically insignificant at 5% level of significance and it can be inferred that variables are uncorrelated in the population.

Incase of EBL, the coefficient of determination ( $R^2$ ) is 0.8860 which indicates that 88.60% of the variation of MPS is explained by explanatory variable of EPS. The remaining 11.40% variation is due to other factors. This indicates that MPS is highly affected by EPS. The simple correlation coefficient (r) between MPS and EPS is 0.9413 which indicates that MPS and EPS is highly positively correlated. The calculated value of 't' is 7.3761 which is greater than tabulated value 2.3646 which is statistically significant at 5% level of significance i.e. EPS has effect of MPS or the variables are correlated in the population.

## **B. Simple Regression Analysis of DPS and EPS**

Simple regression analysis of DPS and EPS is made to analyze the relationship between DPS and EPS and product that effect in DPS by variation in EPS. The major outputs of simple regression model of the sample banks based on data are given below:

Simple regression result between EPS and DPS

$$\text{DPS} = a + b (\text{EPS})$$

**Table no. 4.11****Simple Regression Analysis**

<b>Bank</b>	<b>Sample</b>	<b>Constant (a)</b>	<b>Regression Coefficient (b)</b>	<b>Standard Error of Estimate (SEE)</b>	<b>R<sup>2</sup></b>	<b>r</b>	<b>t-value</b>
<b>SCBL</b>	9	-7.1	0.72	23.45	0.575171	0.7584	3.07
<b>NABIL</b>	9	-30.37	1.08	18.15	0.772289	0.8788	4.87
<b>HBL</b>	9	9.36	0.34	14.82	0.073233	0.2708	0.74
<b>NIBL</b>	9	12.49	0.02	10.04	0.001414	0.0376	0.09
<b>EBL</b>	9	1.57	0.23	23.13	0.323306	0.5686	1.82

(Source: Appendix III)

Above mentioned table shows the regression results between dividend per share and earning per share of SCBL, NABIL, HBL, NIBL and EBL. As the result shows that the beta coefficient (b) are 0.72, 1.08, 0.34, 0.02 and 0.23 of SCBL, NABIL, HBL, NIBL and EBL respectively. In case of SCBL, beta coefficient (b) 0.72 indicates that one rupee increase in EPS leads to an average of about Rs 0.72 increase in DPS, holding other variable constant. In case of NABIL, beta coefficient (b) 1.08 indicates that one rupee increase in EPS leads to an average of about Rs. 1.08 increase in DPS, holding other variable constant.

Similarly, in case of HBL, beta coefficient (b) 0.34 indicates that one rupee increase in EPS leads to an average of about Rs. 0.34 increase in DPS, holding other variable constant. Likewise, beta coefficient (b) of NIBL 0.02 indicates that one rupee increase in EPS leads to an average of about Rs. 0.02 increase in DPS, holding other variable constant. And beta coefficient (b) of EBL 0.23 indicates that one rupee increase in EPS leads to an average of about Rs. 0.23 increase in DPS, holding other variable constant.

The intercept coefficient (a) of SCBL, NABIL, HBL, NIBL and EBL are -7.1, -30.37, 9.36, 12.49 and 1.57 respectively, which shows that the average DPS would be Rs. 7.1, Rs.30.37, Rs.9.36, Rs.12.49 and Rs.1.57 respectively if EPS were zero.

In case of SCBL, the coefficient of determination (R<sup>2</sup>) is 0.575171 which indicates that 57.51% of the variation EPS. The remaining 42.49% variation is due to other factors. The simple correlation coefficient (r) between DPS and EPS is 0.7584 which indicates that DPS and EPS is positively correlated. The calculated value of 't' is 3.07 which is greater than tabulated value 2.3646, which is statistically significant at 5% level of significance i.e. EPS has effect on DPS. Or the variables are correlated in the population.

In case of NABIL, the coefficient of determination (R<sup>2</sup>) is 0.772289 which indicates that 77.22% of the variation of DPS is explained by explanatory variable EPS. The remaining 22.78% variation is due to other factors. The simple correlation coefficient (r) between DPS and EPS is 0.8788 which indicates that DPS and EPS are highly positively correlated. The calculated value of 't' is 4.87 which is greater than tabulated value 2.3646, which is

statistically significant at 5% level of significance, i.e. EPS has effect on DPS. Or the variables are correlated in the population.

Incase of HBL, the coefficient of determination ( $R^2$ ) is 0.073233 which indicates that 7.32% of the variation of DPS is explained by explanatory variable EPS. The remaining 92.68% variation is due to other factors. The simple correlation coefficient ( $r$ ) between DPS and EPS is 0.2708 which indicates that DPS and EPS are positively correlated. The calculated value of 't' is 0.74 which is less than tabulated value 2.3646, which is not statistically significant at 5% level of significance and it can be concluded that the variables are uncorrelated in the population.

Incase of NIBL, the coefficient of determination ( $R^2$ ) is 0.001414 which indicates that 0.14% of the variation of DPS is explained by explanatory variable EPS. The remaining 99.86% variation is due to other factors. The simple correlation coefficient ( $r$ ) between DPS and EPS is 0.0376 which indicates that DPS and EPS are positively correlated. The calculated value of 't' is 0.09 which is less than tabulated value 2.3646, which is not statistically significant at 5% level of significance and it can be concluded that the variables are uncorrelated in the population.

And, the coefficient of determination ( $R^2$ ) of EBL is 0.323306 which indicates that 32.33% of the variation of DPS is explained by explanatory variable EPS. The remaining 67.67% variation is due to other factors. The simple correlation coefficient ( $r$ ) between DPS and EPS is 0.5686 which indicates that DPS and EPS are positively correlated. The calculated value of 't' is 1.82, which is less than tabulated value 2.3646, which is not statistically significant at 5% level of significance and it can be concluded that the variables are uncorrelated in the population.

### **4.2.3. Multiple Regression Analysis**

Multiple regression analysis is a logical extension of the simple linear regression analysis. In multiple regression analysis, two or more independent variables are used to estimate the value of dependent variable whereas in the simple regression analysis single independent variable is used to estimate the value of a dependent variable. Multiple regression analysis helps to know relative movement in the variable.

To estimate the relationship between dividends and stock prices, the theoretical statement of the model is that the price of the stock would depend on dividend per share and earning per share. The theoretical statements framed above may be stated as,

$$P_t = f(DPS_{t-1}, EPS_t)$$

Where,

$P_t$  = Price of stock in time 't'

$DPS_{t-1}$  = Dividend Per share of year 't-1'

$EPS_t$  = Earning per share.

Regression Equation,

$$P_t = a + b_1DPS_{t-1} + b_2EPS_t$$

**Table No. 4.12**

**Regression of Price of Stock on dividend per share and earning per share**

Bank	Sample	Constant (a)	Regression Coefficient (b <sub>1</sub> )	Regression Coefficient (b <sub>2</sub> )	R <sup>2</sup>	Standard Error of Estimate (SEE)	F-Ratio
<b>SCBL</b>	9	385.70	-89.50	59.32	0.0789	1450.79	42.39
<b>NABIL</b>	9	-1951.01	59.67	-1.01	0.6274	672.45	16.07
<b>HBL</b>	9	-701.33	18.94	-25.89	0.7061	264.83	57.36
<b>NIBL</b>	9	32.80	-24.69	31.37	0.5693	691.91	36.47
<b>EBL</b>	9	-528.60	-13.69	43.12	0.8643	434.71	19.48

(Source: Appendix IV)

Incase of SCBL, regression coefficient (b<sub>1</sub>) for DPS is -89.50, which indicates that one rupee increase in DPS leads to an average of Rs. 89.50 decrease in MPS holding EPS constant. There is negative relationship between MPS and DPS since DPS cause decrease in MPS. Similarly, the regression coefficient (b<sub>2</sub>) for EPS is 59.32 which indicate that one rupee increase in EPS resulted in Rs. 59.32 increase in MPS holding DPS variable constant. There is positive relationship between MPS and EPS since EPS cause increase in MPS. The value of R<sup>2</sup> is 0.0789, which shows that the 7.89% variation in MPS is explained by variation in DPS and EPS. The rest 92.11% variation is due to other factors. Since, calculated value of F<sub>0.05(2,24)</sub>(42.39) is more than the table value of F<sub>0.05(2,24)</sub>(3.40), the regression equation is significant at 5% level of significance.

Incase of NABIL, regression coefficient (b<sub>1</sub>) for DPS is 59.67, which indicates that one rupee increase in DPS leads to an average of Rs. 59.67 increase in MPS holding EPS constant. There is positive relationship between MPS and DPS since DPS cause increase in MPS. Similarly, the regression coefficient (b<sub>2</sub>) for EPS is -1.01 which indicate that one rupee increase in EPS resulted in Rs. 1.01 decrease in MPS holding DPS variable constant. There is negative relationship between MPS and EPS since EPS cause increase in MPS. The value of R<sup>2</sup> is 0.6274, which shows that the 62.74% variation in MPS is explained by variation in DPS and EPS. The rest 37.26% variation is due to other factors. Since, calculated value of F<sub>0.05(2,24)</sub>(16.07) is more than the table value of F<sub>0.05(2,24)</sub>(3.40), the regression equation is significant at 5% level of significance.

Incase of HBL, regression coefficient (b<sub>1</sub>) for DPS is 18.94, which indicates that one rupee increase in DPS leads to an average of Rs. 18.94 increase in MPS holding EPS constant. There is positive relationship between MPS and DPS since DPS cause increase in MPS. Similarly, the regression coefficient (b<sub>2</sub>) for EPS is -25.89 which indicate that one rupee increase in EPS resulted in Rs. 25.89 decrease in MPS holding DPS variable constant. There is negative relationship between MPS and EPS since EPS cause increase in MPS. The value



of  $R^2$  is 0.7061, which shows that the 70.61% variation in MPS is explained by variation in DPS and EPS. The rest 29.39% variation is due to other factors. Since, calculated value of  $F_{0.05(2,24)}(57.36)$  is more than the table value of  $F_{0.05(2,24)}(3.40)$ , the regression equation is significant at 5% level of significance.

Incase of NIBL, regression coefficient ( $b_1$ ) for DPS is -24.69, which indicates that one rupee increase in DPS leads to an average of Rs.24.69 decrease in MPS holding EPS constant. There is negative relationship between MPS and DPS since DPS cause decrease in MPS. Similarly, the regression coefficient ( $b_2$ ) for EPS is 31.37 which indicate that one rupee increase in EPS resulted in Rs. 31.37 increase in MPS holding DPS variable constant. There is positive relationship between MPS and EPS since EPS cause increase in MPS. The value of  $R^2$  is 0.5694, which shows that 56.94% variation in MPS is explained by variation in DPS and EPS. The rest 43.06% variation is due to other factors. Since, calculated value of  $F_{0.05(2,24)}(36.47)$  is more than the table value of  $F_{0.05(2,24)}(3.40)$ , the regression equation is significant at 5% level of significance.

Incase of EBL, regression coefficient ( $b_1$ ) for DPS is -13.69, which indicates that one rupee increase in DPS leads to an average of Rs. 13.69 decrease in MPS holding EPS constant. There is negative relationship between MPS and DPS since DPS cause decrease in MPS. Similarly, the regression coefficient ( $b_2$ ) for EPS is 43.12 which indicate that one rupee increase in EPS resulted in Rs. 43.12 increase in MPS holding DPS variable constant. There is positive relationship between MPS and EPS since EPS cause increase in MPS. The value of  $R^2$  is 0.8643, which shows that 86.43% variation in MPS is explained by variation in DPS and EPS. The rest 13.57% variation is due to other factors. Since, calculated value of  $F_{0.05(2,24)}(19.48)$  is more than the table value of  $F_{0.05(2,24)}(3.40)$ , the regression equation is significant at 5% level of significance.

And, the standard error of estimate (SEE) measures the variability of the actual value from its predicted values. SEE of SCBL, NABIL, HBL, NIBL and EBL are 1450.79, 672.45, 264.83, 691.91 and 434.71 respectively. As, the lesser the value of SEE, the better is the model fitted. So, HBL has lesser variability around the line of regression and SCBL has higher variability around the line of regression.

#### **4.2.4. Test of Hypothesis**

A quantitative statement about the population parameter is called a hypothesis. In other words, it is an assumption that is made about the population parameter and then its validity is tested. It may or may not be found valid on verification.

Testing of hypothesis is one of the most important aspects of the theory of decision making. It consists of decision rules required for drawing probabilistic inferences about the population parameters. It often involves deciding at any given point of time whether a given population parameter is the same as before, as claimed or has changed.

##### **4.2.4.1 Analysis of Variance**

###### **A. Analysis of variance of EPS:**

Null Hypothesis,  $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$  i.e., there is no significant difference in EPS of SCBL, NABIL, HBL, NIBL and EBL.

Alternative Hypothesis,  $H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5$  i.e., there is significant difference in EPS of SCBL, NABIL, HBL, NIBL and EBL.

### Earning Per Share

Year/Bank	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>SCBL</b>	141.13	149.30	143.55	143.13	175.84	167.37	131.92	109.99	77.65
<b>NABIL</b>	55.25	84.66	92.61	103.45	129	137	108	106.76	78.61
<b>HBL</b>	60.26	42.45	49.05	47.91	59.24	60.66	62.74	61.90	31.80
<b>NIBL</b>	33.60	51.70	51.70	39.50	59.35	62.57	57.87	37.42	52.55
<b>EBL</b>	32.91	45.58	45.58	54.22	62.78	78.40	91.82	99.99	100.16

Computation of 'F' test statics:

$$\text{Correction Factor (C.F.)} = \frac{T^2}{n} = 295749.03$$

$$\text{Total sum of square (TSS)} = 7033.66$$

$$\text{Sum of square between banks (SSC)} = 5043.15$$

$$\text{Sum of square within banks (SSE)} = 19.92$$

**Table No. 4.13**

### ANOVA of EPS

Source of Variation	Sum of Squares	Degree of Freedom (d.f.)	Mean Sum of Squares	F-ratio
Between Banks	SSC=50431.50	k-1=5-1=4	MSC=SSC/(k-1) =12607.87	F = MSC/MSE = 25.33
Within Banks	SSE=19902	n-k=45-5=40	MSE=SSE/(n-k) =497.55	
Total	TSS=70333.50	n-1=45-1=44		

(Source: Appendix V)

$$\text{Tabulation } F_{0.05(4,40)} = 2.61$$

**Decision:** Since calculated value of 'F' is greater than the tabulated value of 'F' at 5% level of significance. Null Hypothesis ( $H_0$ ) is rejected. That means there is significance difference In EPS of SCBL, NABIL, HBL, NIBL and EBL at 5% level of significance. It indicates that the EPS of different banks are not in similar pattern.

### B. Analysis of Variance of DPS

Null Hypothesis,  $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$  i.e., there is no significant difference in DPS of SCBL, NABIL, HBL, NIBL and EBL.

Alternative Hypothesis,  $H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5$  i.e., there is significant difference in DPS of SCBL, NABIL, HBL, NIBL and EBL.

#### Dividend per Share

Year/Bank	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>SCBL</b>	100	110	110	120	130	80	80	50	55
<b>NABIL</b>	30	50	65	70	85	140	100	85	70
<b>HBL</b>	25	1.32	20	20	31.58	35	40	43.56	36.84
<b>NIBL</b>	0	20	15	12.50	20	5	7.5	20	25
<b>EBL</b>	0	20	20	0	25	10	20	30	30

Computation of 'F' test statistic:

$$\text{Correction Factor (C.F.)} = \frac{T^2}{n} = 94604.59$$

$$\text{Total sum of square (TSS)} = 65211.53$$

$$\text{Sum of square between banks (SSC)} = 48068.84$$

$$\text{Sum of square within banks (SSE)} = 17142.68$$

**Table No. 4.14**

#### ANOVA of DPS

Source of Variation	Sum of Squares	Degree of Freedom (d.f.)	Mean Sum of Squares	F-ratio
Between Banks	SSC=48068.84	k-1=5-1=4	MSC=SSC/(k-1) =12017.21	F = MSC/MSE = 28.04
Within Banks	SSE=17142.68	n-k=45-5=40	MSE=SSE/(n-k) =428.56	
Total	TSS=65211.52	n-1=45-1=44		

(Source: Appendix V)

Tabulation  $F_{0.05(4,40)}=2.61$

**Decision:** Since calculated value of 'F' is greater than the tabulated value of 'F' at 5% level of significance. Null Hypothesis ( $H_0$ ) is rejected. That means there is significance in DPS of SCBL, NABIL, HBL, NIBL and EBL at 5% level of significance. It indicates that the DPS of different banks are not in similar pattern.

### C. Analysis of Variance of MPS

Null Hypothesis,  $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$  i.e., there is no significant difference in MPS of SCBL, NABIL, HBL, NIBL and EBL.

Alternative Hypothesis,  $H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5$  i.e., there is significant difference in MPS of SCBL, NABIL, HBL, NIBL and EBL.

#### Market Price Per Share

Year/Bank	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>SCBL</b>	1550	1640	1745	2345	3775	5900	6830	6010	3279
<b>NABIL</b>	735	735	735	1505	2240	5050	5275	4899	2384
<b>HBL</b>	1000	836	836	920	1100	1740	1980	1760	816
<b>NIBL</b>	760	795	795	800	1260	1729	2450	1388	705
<b>EBL</b>	430	445	445	870	1379	2430	3132	2455	1630

Computation of 'F' test statistic:

$$\text{Correction Factor (C.F.)} = \frac{T^2}{n} = 188772353.10$$

$$\text{Total sum of square (TSS)} = 118413305.90$$

$$\text{Sum of square between banks (SSC)} = 29358565.80$$

$$\text{Sum of square within banks (SSE)} = 89054740.10$$

**Table No. 4.15**

#### ANOVA of MPS

Source of Variation	Sum of Squares	Degree of Freedom (d.f.)	Mean Sum of Squares	F-ratio
Between Banks	SSC=29358565.80	k-1=5-1=4	MSC=SSC/(k-1)=7339641.45	F = MSC/MSE

Within Banks	SSE=89054740.10	n-k=45-5=40	MSE=SSE/(n-k) =2226368.50	= 3.29
Total	TSS=118413305.90	n-1=45-1=44		

(Source: Appendix V)

Tabulation  $F_{0.05(4,40)}=2.61$

**Decision:** Since calculated value of 'F' is greater than the tabulated value of 'F' at 5% level of significance. Null Hypothesis ( $H_0$ ) is rejected. That means there is significance in MPS of SCBL, NABIL, HBL, NIBL and EBL at 5% level of significance. It indicates that the MPS of different banks are not in similar pattern.

#### D. Analysis of Variance of DPR

Null Hypothesis,  $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$  i.e., there is no significant difference in MPS of SCBL, NABIL, HBL, NIBL and EBL.

Alternative Hypothesis,  $H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5$  i.e., there is significant difference in DPR of SCBL, NABIL, HBL, NIBL and EBL.

#### Dividend Payout Ratio

Year/Bank	2002	2003	2004	2005	2006	2007	2008	2009	2010
SCBL	70.85	73.67	76.62	83.84	73.93	47.80	60.64	45.45	70.83
NABIL	54.29	59.06	70.19	67.67	65.89	102.19	92.59	69.61	89.04
HBL	41.48	2.66	40.77	41.74	53.31	57.70	63.76	70.37	115.84
NIBL	0	50.56	29.01	31.80	33.70	8	12.96	53.44	47.57
EBL	0	66.89	43.88	0	39.82	12.76	21.78	30.00	29.95

Computation of 'F' test statistic:

$$\text{Correction Factor (C.F.)} = \frac{T^2}{n} = 116019$$

Total sum of square (TSS) = 34566.50

Sum of square between banks (SSC) = 17002.70

Sum of square within banks (SSE) = 17563.80

**Table No. 4.16**

**ANOVA of DPR**

Source	of	Sum of Squares	Degree	of	Mean	Sum of	F-ratio
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Variation		Freedom (d.f.)	Squares	
Between Banks	SSC=17002.70	$k-1=5-1=4$	MSC=SSC/(k-1) = 400250.60	F = MSC/MSE = 9.68
Within Banks	SSE= 17563.80	$n-k=45-5=40$	MSE=SSE/(n-k) =439.09	
Total	TSS=34566.50	$n-1=45-1=44$		

(Source: Appendix V)

Tabulation  $F_{0.05(4,40)}=2.61$

**Decision:** Since calculated value of 'F' is greater than the tabulated value of 'F' at 5% level of significance. Null Hypothesis ( $H_0$ ) is rejected. That means there is significance in DPR of SCBL, NABIL, HBL, NIBL and EBL at 5% level of significance. It indicates that the DPR of different banks are not in similar pattern.

# CHAPTER V

## SUMMARY, CONCLUSION AND RECOMMENDATION

### 5.1 Summary

Dividend policy is one of the major decisions of the financial management. The dividend refers to that portion of the firm's net earning, which is paid out to the shareholders as a return for their investments. Dividend serves as a simple, comprehensive signal of management's interpretation of the firm's recent performance and its future prospects. The dividend decision affects the operation, and prosperity of the organization. To attract the new investors and to maintain the existing ones, dividend can be used as an effective tool. Dividend implies paying earning to the equity shareholder and theories of dividend policy differ some prefer residual theory that conveys passive residual earning available for payment whereas MM hypothesis insists on dividend irrelevance in the sense that dividend policy does not affect the stock price (which makes dividend decision irrelevant).

There are others who argue that dividend policy do affect value due to uncertainty factor. Many factors affect the dividend payment depending upon the investor's need and preference on one hand and the financing need of the financial institution to the potential investment on the other hand.

The dividend decision, in one hand affects the company's structures. In other hand it has an information value to the investors. The impacts on share price are one another influence of dividend decision.

Since 1984, when the government of Nepal has adopted economic liberalization and open market policy, many joint venture banks, finance companies and insurance companies are established in Nepal. These institution got opportunity and appropriate environment to expand their activities, it is because the initially established financial institution are unable to supply credit needs and meet the market expectation that market activities towards the growth position. The stockholders have a high desire and expectation that market price of share will be higher than net worth and getting high percentage of dividend from earning. So distributing dividend to the shareholders is effective way to achieve the trust of investor and encourage them to invest in shares.

This study mainly aims the prevailing practices of listed companies regarding dividend payment. The study is mainly focused to access the dividend practices of different commercial banks. Instability of dividend and haphazard payout ratio is the most common practice of Nepalese companies. Companies do not adequately maintain cash balance for dividend payment. So, it covers some specific objectives to find out the relationship between other financial indicates and also to find out the appropriate dividend policies for different companies. Shareholders have high expectation that market prices of shares will be significantly higher than net worth. The companies invested by foreigners are paying more attractive dividend than the companies promoted by the indigenous promoters of Nepal. The study of relationship between the dividend and stock price have been accomplished by collecting and calculating the earning per share, dividend per share, dividend payout ratio, dividend yield, earning yield and price earning ratio. To make the research reliable, many more analysis are conducted to find out appropriate relationship between dividend and other variables, which affects the dividend. The consistency of dividend distribution of different companies is also analyzed by using statistical tools. The relationship also statically tested at 5% level of significance.

The study has been primarily focused to evaluate the resultant impact of dividend on market stock price. The study is mainly based on the secondary data of five companies which are listed in NEPSE. The last nine years data from years 2002 to 2010 are taken for research study. The reliability of conclusions made in this study depends upon the accuracy of secondary data.

Three major aspect of the study are discussed in this chapter. At the beginning all the findings have been made summarized and some conclusions have been drawn upon the basis if finding. An attempt is also made to present the gap and the factors to cause those gaps. This chapter is very important in the sense that

- i. it shows the result of what was observed during the research.
- ii. it concluded the finding in an understandable formed and
- iii. it provided dues of suggestions to the concerned authorities as well as partiers and academicians.

The recommendation is presented in the last part of this chapter considering the major finding and gaps found. The recommendations presented will certainly be milestone to improve exiting condition in this field.



## 5.2 Major Finding of the study

The Major finding of obtained from the secondary data analysis are stated as follows:

1. EPS of EBL is in increasing trend and EPS of SCBL, NABIL, HBL and NIBL is in fluctuating trend through the study period.
2. The mean EPS of SCBL, NABIL, HBL, NIBL and EBL are Rs.137.76, Rs.99.48, Rs.53.66, Rs.48.23 and Rs.66.19 respectively. It shows that the highest mean EPS is of SCBL and lowest is of NIBL.
3. Profitability of common shareholders investment is better in SCBL and NABIL than other companies as they are found to maintain their EPS above the industry average.
4. Dividend payout is not regular and attractive phenomena in Nepalese listed companies. NABIL has highest DPS of Rs.140 among five listed companies. SCBL and NABIL have been found to maintain its DPS above the industry average. It indicates that they pay higher dividend as compared to others companies and it creates positive attitude of the investment towards SCBL and NABIL, which consequently helps to increase the market stock price. But, EBL has not paid any dividend for two years so coefficient of variation of EBL, Which indicates relative dispersion is highest i.e., 66.69% but SCBL has lowest C.V. of 30.38%. This clearly indicates that companies do not have any stable and consistent dividend practice.
5. Average market price share of SCBL, NABIL, HBL, NIBL and EBL are Rs.3674.88, Rs.2647, Rs.1221.33, Rs.1203.00 and Rs.1494.55 respectively. Mean MPS of SCBL and NABIL is above the industry average. Higher market price creates the positive attitude of the investors towards the bank, while consequently attracts the investors to invest in such high valued shares.
6. There is highest fluctuation in MPS of NABIL as depicted CV of 77.31% where as lowest fluctuation in CV is 38.26% of HBL.
7. The average highest DPR is 75.61% of NABIL followed by SCBL with 67.07%. SCBL and NABIL have been found to maintain its DPR always above the industry average. There is highest fluctuation in DPR of HBL as depicted by 30.24%. Where as lowest fluctuation in DPR is 13.09% of SCBL.

8. HBL has the lowest fluctuation in the price currently paid by the market for each rupee departed by EPS, followed by NIBL. SCBL has the highest fluctuation in this regard as depicted by P/E ratio.

9. The average highest earning yield is 5.68% of NABIL followed by SCBL and lowest is 4.51% of NIBL. But there is highest fluctuation in EYR of NABIL as depicted by CV of 59.56% where as lowest fluctuation in CV is 25.25% of HBL.

10. When dividend amount is considered as return on market price of shares the highest average dividend yield is 3.89% of NABIL and lowest is of NIBL with 1.21%. The highest fluctuation in DYR is 100.35% of EBL and lowest is 46.79% of NABIL. It is found that the company with foreign investment is paying cash dividend. The dividend amount paid by the listed companies appears very low which is less than the interest provided by commercial banks in fixed deposit average DYR is 2.58% only.

11. When EPS and MPS are taken into consideration, it is found that positive correlation exists in all the companies.

12. It is found that EPS is the strongest variable that determines the MPS for EBL as depicted by  $R^2$  of 68.09%.

13. When EPS and DPS are taken into consideration it is found that positive correlation exists in all the companies.

14. It is found that EPS is the strongest variable that determines the DPS for NABIL as depicted by  $R^2$  of 76.59%.

15. When MPS and EPS taken into consideration it is found that the regression coefficient (b) is positive in all sample companies which indicates that increase in earning leads to increase in MPS.

16. With respect to regression analysis of DPS and EPS, the regression coefficient (b) is found to be positive in all companies which indicate that increase in DPS lead to increase in EPS.

17. The multiple regression of MPS on EPS and last years dividend shows that MPS and last DPS has positive relationship in NABIL and HBL and negative in SCBL, NIBL and EBL where as MPS and EPS has positive relationship holding last DPS constant in all banks except HBL. The F-statistic is significant for all of the five banks at 5% level of significance.

18. ANOVA of EPS indicates that there is significant difference among the EPS of five banks. That means, EPS of five banks are not in similar pattern.

19. ANOVA of DPS indicates that there is significant difference among the EPS of five banks. That means DPS of five banks are not in similar pattern.

20. ANOVA of MPS indicates that there is significant difference among the MPS of five banks. That means MPS, of five banks are not in similar pattern.

21. ANOVA of DPR indicates that there is significant difference among the DPR of five banks. That means DPR of five banks are not in similar pattern.

### **5.2.1 Issues and Gaps**

In this section, the gap perceived in this study has been presented. The issues related to dividend and other relevant factors found while analyzing the variables are also presented here. Possible causes to perceive this gap also has been scrutinized as far as possible.

1. There is lack of rules and regulations that bind companies to pay dividend every year. Most of the companies do not have clear dividend policy and also the government does not have any clear cut policy towards dividend. There is no provision in company act -2053, commercial bank act-2031 and other regulating act regarding dividend payment.

2. Dividend payout ratio doesn't show any stability and co-ordination with variables. These banks don't have any strategic dividend policy. Payment of cash and stock dividend are made without wise managerial decisions.

3. There seems instability and inconsistency in dividend payout by the banks.

4. The risk free rate of return should be considered during dividend payout but in many cases small amount of dividend is paid without considering the risk free rate of return.

### **5.3 Conclusion**

The above mentioned major finding this study to the following conclusion:

i) **Dividend payout in irregular and not uniform:**

Dividend payout is not a regular phenomenon in Nepalese companies. In Nepal, only a few listed companies have been paying regular dividends to their shareholders. Further, companies

have not been following stable dividend policy. They neither follow a constant dividend per share, constant dividend payout ratio or low regular dividend plus extras. There seems instability and inconsistency in dividend payout. This is due to the absences of strategic dividend policy and firms long-term vision to cope with challenging competitive situation of business world.

**ii) Earning and Dividend per Share:**

The positive relationship between dividend and earning shows that the sample banks pay high dividend when the earring increases and pay low dividend when earning decreases. Earning and Dividend payout of SCBL and NABIL are comparatively high than HBL, NABIL and EBL and it is said to be satisfactory in Nepalese context. On the other hand the dividend payout ratio of listed companies in Nepal has not been able to distribute fair dividends. None of these companies have well defined and appropriate policy regarding dividend payout.

**iii) Dividend and market price:**

The insignificant relationship between DPS and other variables indicates that dividend policy of all these companies is not better. This study results to conclusion that the cash dividend cannot be said as a sole factor to all affect market stock price. But there are some other factors like earning power, bonus shares decisions, right shares decisions, information value of dividend decision, political stability, economic boom of the country etc. also cause the share price fluctuation. In an imperfect market, the security brokers, other market makes and the rumors they spray in the market have also significant role in share price fluctuation.

## **5.4. Recommendation**

Although, this study is concerned with dividend practices of Nepalese Financial Institution, it may be appropriate to provide a package of suggestion in the light of major finding and conclusions. These recommendations may also have some repercussion, but there is no doubt of these measures to improve the existing conditions. The following suggestions arte recommended for the problems on the issue of dividend which are find out from the analysis of data.

**1. Strategic Dividend policy**

Companies are paying dividend without adopting any appropriate policy. It seems impossible to increase shareholders' wealth. Companies should have their clearly defined dividend policy.

Companies management are advised to adopt the long run dividend policy i.e. stable dividend, constant payout, low regular plus extra polices etc. which helps to boost up the wealth of shareholders. By considering the different affecting factors, the management should be alerted about theirs duties and responsibilities to protect investors' invest but not for the operation of company in a way desired by themselves and every policy should be passed only on the consumers of shareholders

## **2. Choosing dividend form**

In Nepalese context only two form of dividend is widely used i.e. stock dividend (bonus share) and cash dividend. Other form of dividend like bond dividend, property dividend, script dividend etc has not been practiced. Whether to distribute the stock dividend or cash dividend should be decided on the desire and behalf of the shareholders not only from the side of the management. The company should distribute the dividend in other forms than used one that can satisfies the shareholders in maximum way. Other forms of dividend can also be proposed to the shareholders by the management in the annual general meeting for approval.

## **3. To cope with changing environment**

Challenges and threats have been rising in front of the companies due to internal and external environment and also due to globalization. The companies should strengthen its capacity by hiring highly intellectual personnel's to cope with competitive market. Also, the companies must have long-term vision towards earnings, dividend payment and financing through retained earnings for profitable opportunity. Therefore, there must be balance in between the benefits for investor and company's management. So, the company should apply appropriate dividend policy to face the threats and challenges and grab the opportunities that may overcome in the future.

## **4. Balance activities**

The companies earning per share, dividend par share, market price per share dividend payout ratio etc. has been widely fluctuated. To remove this problem, companies need to make appropriate plan to achieve target earning, distribute target dividend, invest target amount by selecting profitable activities and increase target net worth which helps to maintain planned MPS. To achieve the target plan appropriate strategy should be formulated that can meet the desire for shareholders. While proposing dividend, the company should consider the risk free rate of return, net worth and liquidity position.

## **5. Expansion of activities and mobilize the fund**

The companies can expand the activities and utilize the capital in profitable opportunities which help to build faith form public and increase the capacity and performance of the companies. The company should recognize and search the new opportunities by eagle eyes that may be done by co-operating with different organizations. The high potential opportunities in Nepal are may be in the field of hydropower, infrastructure development, modernized agriculture etc. that will be the milestone in the economic development of Nepal.

To establish and conduct the large scale industry large amount of electricity is required which can be fulfilled only by building hydropower mostly with reservoir based projects. So, hydropower will be the good potential opportunity for the banking companies. Incase of lack of profitable opportunities and chance of expansion, dividend should be increased significantly to win faith of companies for public and investors rather than keeping within the organization.

## **6. Flow of Information.**

Regular, simplified and adequate information must be provided by the companies of their financial; and operational performance which not only make easier to take but or sell decision of share but also help to direct the random capital market walk towards perfect capital market.

The Nepal stock Exchange limited (NEPS) Security Board of Nepal (SEBON), Nepal Rastra Bank (NRB) and other organization, media flow the information widely. But simplified and update information need to be provided timely by concerned companies. A separate information center must be established with enough resources right and obligation, to collect, analyses, simplifies, supply updates the information and to collect feedback of the organization in these concerned bodies.

A separate supervisory unit must be made to monitor, supervise, and evaluate their performance. Internet websites can be used to provide information about stock market and Concern Company with update it time by time which helps the public to get required information as needed.

## **7. Rules and Regulations**

The legal rules are not enough regarding to dividend. Binding legal rules with enough flexibility is needed regarding dividend payment. Most of the companies pay fewer dividends

however, their earnings are higher. The dividend payment is found less than interest rate on deposit provided by banks i.e. actual rate of return from stock investment is less than interest rate provided by banks. To bind companies to pay dividend, the present laws must be amended by initial works done jointly by concerned parties.

## **8. Others**

It is said that capital market of Nepal does not move according to the principle of investment. The capital market of Nepal is imperfect market. The capital market is controlled under by limited people that can be counted in fingertips. The transaction system of the market is very tedious and time consuming. So, to overcome with these problems, Central Depository System (DPS) and Mutual Fund should be established. Due to CDS system, the transaction of shares can be done within very short time than present one and large transaction can be done in a day and due to establish of mutual fund, the general investors will be more benefited and safe and that will correct the imperfect capital market . It will ultimately benefit the general shareholders.

The capital market of Nepal is centralized only in capital city. To reach with other parts of Nepal, generally the main cities of Nepal, The Nepal Stock Exchange should be extended to other parts than Kathmandu. It will also benefit the general shareholders ultimately.

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## Appendix

Appendix I

### Basic Data Table Using Cash Dividend Only

<b>Standard Chartered Bank</b>			
<b>Years</b>	<b>EPS</b>	<b>DPS</b>	<b>MPS</b>
2002	141.13	100	1550
2003	149.30	110	1640
2004	143.55	110	1745
2005	143.13	120	2345
2006	175.84	130	3775
2007	167.37	80	5900
2008	131.92	80	6830
2009	109.99	50	6010
2010	77.65	55	3279

<b>NABIL Bank</b>			
<b>Years</b>	<b>EPS</b>	<b>DPS</b>	<b>MPS</b>
2002	55.25	30	735
2003	84.66	50	735
2004	92.61	65	1000
2005	103.45	70	1505
2006	129	85	2240
2007	137	140	5050
2008	108	100	5275
2009	106.76	85	4899
2010	78.61	70	2384

<b>Himalayan Bank</b>			
<b>Years</b>	<b>EPS</b>	<b>DPS</b>	<b>MPS</b>
2002	60.26	25	1000
2003	49.45	1.32	836
2004	49.05	20	840
2005	47.91	20	920
2006	59.24	31.58	1100
2007	60.66	35	1740
2008	62.74	40	1980
2009	61.90	43.56	1760
2010	31.80	36.84	816

<b>Nepal Investment Bank</b>			
<b>Years</b>	<b>EPS</b>	<b>DPS</b>	<b>MPS</b>
<b>2002</b>	33.60	0	760
<b>2003</b>	39.56	20	795
<b>2004</b>	51.70	15	940
<b>2005</b>	39.50	12.50	800
<b>2006</b>	59.35	20	1260
<b>2007</b>	62.57	5	1729
<b>2008</b>	57.87	7.5	2450
<b>2009</b>	37.42	20	1388
<b>2010</b>	52.55	25	705

<b>Everest Bank</b>			
<b>Years</b>	<b>EPS</b>	<b>DPS</b>	<b>MPS</b>
<b>2002</b>	32.91	0	430
<b>2003</b>	29.90	20	445
<b>2004</b>	45.58	20	680
<b>2005</b>	54.22	0	870
<b>2006</b>	62.78	25	1379
<b>2007</b>	78.40	10	2430
<b>2008</b>	91.82	20	3132
<b>2009</b>	99.99	30	2455
<b>2010</b>	100.16	30	1630

### Simple Regression Analysis of MPS and EPS

$$S.E.E \ X \sqrt{\frac{Y^2 Z a \quad Y Z b \quad XY}{n Z 3}}$$

$$r \ X \frac{xy}{\sqrt{x^2 \sqrt{y^2}}}$$

Where,

$$\mathbf{x} = X Z \bar{X}$$

$$\mathbf{y} = Y Z \bar{Y}$$

$R^2$  = Square of correlation coefficient

$$t = \frac{r}{\sqrt{1 Z r^2}} \mid \sqrt{n Z 2} \sim t_{nZ2}$$

Where,

S.E.E = Standard Error of Estimate

Y = Market Price Per share

X = Earning per share

n = no. of years

a = intercept

b = regression coefficient

r = coefficient of correlation

$R^2$  = Coefficient of Determination

T = Test statistics 't'

## SUMMARY OUTPUT

### SCBL

Regression	Statistics
S.E.E.	2388.99
r	0.0789
R <sup>2</sup>	0.006225
t-value	0.2094
n	9

### NABIL

Regression	Statistics
S.E.E.	1721.97
r	0.6274
R <sup>2</sup>	0.003931
t-value	2.1316
n	9

### HBL

Regression	Statistics
S.E.E.	383.24
r	0.7061
R <sup>2</sup>	0.498718
t-value	2.6382
n	9

### NIBL

Regression	Statistics
S.E.E.	551.77
r	0.5693
R <sup>2</sup>	0.323989
t-value	1.8321
n	9

### EBL

Regression	Statistics
S.E.E.	564.71
r	0.86343
R <sup>2</sup>	0.680955
t-value	4.5463
n	9

**Simple Regression Analysis of DPS and EPS**

$$S.E.E \ X \sqrt{\frac{Y^2 Z a \ Y Z b \ XY}{n Z 3}}$$

$$r \ X \frac{xy}{\sqrt{x^2 \sqrt{y^2}}}$$

Where,

$$\mathbf{x} = X \ Z \bar{X}$$

$$\mathbf{y} = Y \ Z \bar{Y}$$

$R^2$  = Square of correlation coefficient

$$t = \frac{r}{\sqrt{1 - R^2}} \sqrt{n - 2} \sim t_{n-2}$$

Where,

S.E.E = Standard Error of Estimate

Y = Dividend Per share

X = Earning per share

n = no. of years

a = intercept

b = regression coefficient

r = coefficient of correlation

$R^2$  = Coefficient of Determination.

t = Test statistics 't'



## SUMMARY OUTPUT

### SCBL

Regression	Statistics
S.E.E.	23.45
r	0.7584
R <sup>2</sup>	0.575171
t-value	3.07
n	9

### NABIL

Regression	Statistics
S.E.E.	18.15
r	0.8788
R <sup>2</sup>	0.772289
t-value	4.87
n	9

### HBL

Regression	Statistics
S.E.E.	14.82
r	0.2708
R <sup>2</sup>	0.073233
t-value	0.74
n	9

### NIBL

Regression	Statistics
S.E.E.	10.04
r	0.0376
R <sup>2</sup>	0.001414
t-value	0.09
n	9

### EBL

Regression	Statistics
S.E.E.	23.13
r	0.5686
R <sup>2</sup>	0.323306
t-value	1.82
n	9

**Multiple Regression Analysis**

$$S.E.E = \sqrt{\frac{X_1^2 Z a^2 + X_1 Z b_1 + X_1 X_2 Z b_2 + X_1 X_3 Z b_3 + \dots}{n Z 3}}$$

$$R^2 = \frac{a + X_1 \Gamma b_1 + X_1 X_2 \Gamma b_2 + X_1 X_3 Z n \bar{X} \bar{A}}{X_1^2 Z n \bar{X}_1 \bar{A}}$$

Where,

$X_1$  = Market Price per share

$X_2$  = Dividend Per Share of last year

$X_3$  = Earning per Share

$a$  = intercept

$b_1$  = regression coefficient

$b_2$  = regression coefficient

S.E.E = Standard Error of Estimate

$R^2$  = Coefficient of Multiple Determination.

$n$  = no. of years

$$\bar{X}_1 = \frac{X_1}{n}$$

## SUMMARY OUTPUT

### SCBL

Regression	Statistics
S.E.E.	1450.79
R <sup>2</sup>	0.0789
n	9

### ANOVA

	Sum of squares	d.f.	Mean sum of squares	F- ratio
Regression	76034379.44	2	60895777.95	42.39
Residual	34470032.67	24	1436251.36	
Total	110504412.11	26		

## SUMMARY OUTPUT

### NABIL

Regression	Statistics
S.E.E.	672.45
R <sup>2</sup>	0.6274
n	9

### ANOVA

	Sum of squares	d.f.	Mean sum of squares	F- ratio
Regression	39282300.49	2	19641150.25	16.07
Residual	29328260.74	24	1222010.86	
Total	68610561.23	26		

## SUMMARY OUTPUT

### HBL

Regression	Statistics
S.E.E.	264.83
R <sup>2</sup>	0.7061
n	9

### ANOVA

	Sum of squares	d.f.	Mean sum of squares	F- ratio
Regression	8363382.04	2	4181691.02	57.36
Residual	174965.63	24	72902.27	
Total	10113036.67	26		

## SUMMARY OUTPUT

### NIBL

Regression	Statistics
S.E.E.	691.91
R <sup>2</sup>	0.5693
n	9

**ANOVA**

	Sum of squares	d.f.	Mean sum of squares	F- ratio
Regression	8245937.55	2	4122968.77	36.47
Residual	2712940.58	24	113039.19	
Total	10958878.13	26		

**SUMMARY OUTPUT****EBL**

Regression	Statistics
S.E.E.	434.71
R <sup>2</sup>	0.8643
n	9

**ANOVA**

	Sum of squares	d.f.	Mean sum of squares	F- ratio
Regression	12675373.36	2	6337686.68	19.48
Residual	7806010.36	24	325250.43	
Total	20481383.73	26		

## Result of Hypothesis Test

### ANOVA: Single Factor (EPS)

Grand Total (T) = 3648.11

Correction Factor (C.F.) =  $T^2/n = 13308706.57/45 = 295749.03$

Total sum of squares (TSS) = Sum of square of all items – C.F. = 70333.66

Sum of square between samples (SSC) = 50431.50

Sum of square within samples (SSE) = TSS-SSC = 19902

#### ANOVA

Sources of Variation	Sum of squares	d.f.	Mean sum of squares	F- ratio
Between samples	50431.50	4	12607.87	25.33
Within samples	1992	40	497.55	
Total	7033.50	44		

### ANOVA: Single Factor (DPS)

Grand Total (T) = 2063.30

Correction Factor (C.F.) =  $T^2/n = 4257206.89/45 = 94604.59$

Total sum of squares (TSS) = Sum of square of all items – C.F. = 65211.53

Sum of square between samples (SSC) = 48068.84

Sum of square within samples (SSE) = TSS-SSC = 171442.68

#### ANOVA

Sources of Variation	Sum of squares	d.f.	Mean sum of squares	F- ratio
Between samples	48068.84	4	12017.21	28.04
Within samples	17142.68	40	428.56	
Total	65211.52	44		

### ANOVA: Single Factor (MPS)

Grand Total (T) = 92167

Correction Factor (C.F.) =  $T^2/n = 8594755889/45 = 188772353.1$

Total sum of squares (TSS) = Sum of square of all items – C.F. = 118413305.90

Sum of square between samples (SSC) = 29358565.8

Sum of square within samples (SSE) = TSS-SSC = 89054740.1

#### ANOVA

Sources of Variation	Sum of squares	d.f.	Mean sum of squares	F- ratio
Between samples	29358565.8	4	7339641.45	3.29
Within samples	89054740.1	40	2226368.5	
Total	118413305.90	44		

### **ANOVA: Single Factor (Dividend Payout Ratio)**

Grand Total (T) = 2284.92

Correction Factor (C.F.) =  $T^2/n = 5220859.40/45 = 116019$

Total sum of squares (TSS) = Sum of square of all items – C.F. = 34566.50

Sum of square between samples (SSC) = 17002.7.27

Sum of square within samples (SSE) = TSS-SSC = 17563.80

### **ANOVA**

Sources of Variation	Sum of squares	d.f.	Mean sum of squares	F- ratio
Between samples	17002.7.27	4	400250.60	9.68
Within samples	17563.80	40	439.09	
Total	34566.50	44		