

A STUDY ON DIVIDEND POLICY

A Comparative Study on HBL, EBL and NABIL Bank Ltd.

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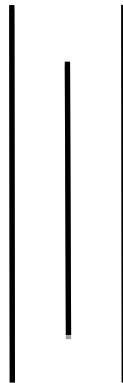
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RECOMMENDATION

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DECLARATION

I hereby declare that the work reported in the thesis entitled “**A Study on Dividend policy**” submitted to Office of Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial Fulfillment of the requirement of the Master Degree in Business Studies (M.B.S.) Under the guidance and supervision of **Mrs. RuchilaPandey** of Shanker Dev Campus.

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Researcher

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ABBREVIATIONS

EBL	=	Everest Bank Limited
HBL	=	Himalayan Bank Limited
DPS	=	Dividend per Share
EPS	=	Earnings per Share
DPR	=	Dividend Payout Ratio
EY	=	Earnings yield
DY	=	Dividend Yield
MPS	=	Market Value per Share
NEPSE	=	Nepal Stock Exchange Ltd
NWPS	=	Net worth per Share
SEBON	=	Security Board of Nepal
Ltd	=	Limited
Co.	=	Company
F/Y	=	Fiscal Year
NRB	=	Nepal Rastra bank
T.U.	=	Tribhuvan University

CHAPTER – ONE

INTRODUCTION

1.1 Background of the Study

Nepal is a developing country with very low per capita income. Very part of the population has spare money where as a big part is under line of poverty. Among the small part of population with spare money only few people are interested to invest the money in business due to fear of not getting back. So the people who invest money in the business expect return from the money they invest. Dividend plays vital role to attract the people to invest in business. People are encouraged to invest in the business, which pay high amount of dividend. They do not care whether the business is actually running in profit or not. Public are interested to invest their money on the shares of banks for dividend if the firm is dividend paying firm. So, paying dividend is very important to attract the shareholder which is very important constituent of the business. Banks play significant role in the economic development of the country. The major objective of the bank is to collect idle money from scattered sources and mobilize them in most profitable sectors. They provide necessary capital required for trade and commerce mobilizing the scattered savings.

The policy of a company on the division of its profits between distribution to its shareholders as dividend and retention for its investment is known as dividend policy. Corporate firms have many functions and one of the vital functions is dividend policy. Most of the companies pay dividend to their shareholders annually in Nepal. Dividend may be paid in cash, stock. Cash dividends as well as bonus dividends are commonly used of our country.

The importance of the banks is highly appreciated, it needs proper attention to run successfully normally banks play at public money therefore banks should play more attention whether their money is properly utilized or not and running at profit or loss. If there is profit, the business firm can provide different facilities in the long run, the profit which can be distributed among the owners as dividend.

The policy of the company on the division of its net profit between shareholders as dividend and reinvestment in the firm is known as dividend policy. It is believed by some that, "In order to maximize wealth under uncertainty, the firm must pay enough dividends to satisfy investors". The dividend policy reflects the firm's decision to pay out earnings versus retaining them for reinvestment in the firm. Any change in dividend policy has both favorable and unfavorable effects on the price of the firm's stock. Higher dividends mean higher cash flow to investors, which is good but lower future growth, which is bad. The optimal dividend policy balances this opposing force and maximizes the price of the stock. This policy may vary from company to company. Dividend policy is an important decision in financial management. It determines the amount of earnings to be distributed to shareholders and the amount to be retained in the firm.

The main objectives of commercial banks are to earn profit by proper mobilization of resources. Commercial banks function in much different ways such as accepting deposits, providing interest in the formulation of capital performing agency functions which make business easier and they also play an important role in credit creation when the economy is in a boom. Normally, banks play with public money therefore, banks should pay more attention whether their money is properly utilized or not and running at profit or loss. If there is no profit a business firm becomes unable to provide its facilities in the long run, therefore the existence of profit to any business firm is the basic factor. This profit can be distributed among the owners as dividend.

Generally, stockholders' expectations rise with the increase in the company's profits and in many cases. Only a business running at profit is capable of paying dividends. Among different corporations, there is no uniformity in the dividend distribution practiced in Nepal. An alternative form of dividend is share repurchase. If a firm has excess cash and insufficient profitable investment opportunities to justify the use of these funds, it is in the shareholder's interest to distribute the funds. The distributions can be either by the repurchase of shares or by paying out increased dividends. There is a reciprocal relationship between retained earnings and cash dividends. If retained earnings are made more by the company, less dividend will be distributed to shareholders and vice versa. If a conservative dividend policy were formulated to retain a larger share of

earning plentitude of resources would be available to the firm for its growth and modernization purpose.

The dividend payout ratio may be different but the common dividend payout ratio in 40% different studies reveal. It seems that the actual owners of the corporation are not treated rightly by consistence with the objective maximizing the value of firm. It has a direct influence on return's components, dividend and capital gain. Dividend policy's important aspect is to determine the amount to be retained in the firm.

In this study, the dividend policy of three sample banks will be compared analytically. The sample bank is from Himalayan Bank Limited and Other two from Everest Bank Limited and NABIL Bank Limited Kathmandu.

1.2 Brief Introduction about Organization

Himalayan Bank Limited: Himalayan Bank Limited established in 18th January 1993 under the company act 1964, and it started its operation from 1993 February, is a joint venture bank. It has partnership with Habib bank ltd of Pakistan. This is the first joint venture bank managed by Nepali chief executive. The shareholding pattern of the bank is: 20% by Habib Bank Limited, 14% share owned by Nepalese private sector promoters, 51% by Nepalese investors and 15% share by general public. It has an authorized capital of Rs.2000 million, paid up capital Rs.1013 million (*source: annual report of HBL*).

Everest Bank Limited: Everest Bank Limited (EBL) started its operation in 1994 with a view and objectives of extending professionalized and efficient banking services to various segments of the society. Currently 80% of share is owned by Nepalese investors; 15% of share by other Licensed Institution, 15% by Insurance Companies, 50% by other investors and 20% share by general public. Punjab National Bank (PNB), joint venture partner of the bank (holding 20% equity in the bank) is the largest nationalized bank in India having 114 years of banking history. (*Source: Annual report of Everest Bank Ltd*)

NABIL Bank Limited: NABIL Bank Limited started its operation in July 1984 under company act 1964. Dubai Bank Limited was the initial foreign Joint Venture partner

with 50% equity investment. Later the ownership of Dubai Bank Limited was transferred to Emirate Bank International Limited, which is currently managing NABIL in accordance with the Joint-venture technical service agreement between Nepalese promoters and Dubai Bank Limited. The Bank has Rs.3000 million authorized capitals, Rs.2000 million issued capital and Rs.2000 million paid up capital. Currently, NABIL is one of the leading commercial bank of the country. (Source: Annual Report of NABIL)

1.3 Statement of Problem

Dividend distribution is not matching with the earning of the commercial banks. Similarly, no proper relationship between dividend and quoted market price of share exist. Companies with lower returns record rigid price whereas companies making sound returns do not rigid in price of share. Generally, earning of commercial banks depends upon the operating functions. What kinds of operation policies are followed by commercial banks that determine the earning?

There are various questions which may arise in our mind and on the basis of which the research problem are identified. The research is done as the solution to the problems give rise to the necessity of research. The dividend decision, however, is a crucial as well as controversial area of managerial finance. There is no consensus among the financial scholars on this subject matter and its relation with stock price. Some financial scholars say that stock prices are least influenced by dividend per share while some others believe that its relevance to the stock prices is quite significant. The idea of relevance is vague as well. It is rather hard to define whether dividend per share has positive or its effect is negative one. Thus, dividend policy is not simple enough to understand. This is because many factors affect the dividend policy which may vary according to variety in the context of Individual Corporation.

In Nepalese context, the companies listed in NEPSE are not seen so serious regarding dividend decisions. Some Nepalese acts like Nepal Company Act 2053, Nepal Commercial Bank Act 2031 and other regulating acts are still silent regarding dividend distribution. So, different companies are adopting different dividend decisions inconsistently. There is a common trend of deciding the dividend by the

management of companies instead of by shareholders meeting. Banks are different from other types of companies in many aspects. Hence, the results of such analytical study in the case of banks may differ from that of others.

The major problems for the purpose of this study are:

Is there any relationship of dividend with EPS, MPS, net worth and net profit in the case of sampled bank?

1. Do all companies have uniformity in dividend policy?
2. Can bank increase the value of stock by changing dividend policy on payout ratio?
3. Are the banks following any specific dividend policy?
4. Is dividend a residual decision in the case of sampled bank?
5. What is the dividend pattern followed by the sampled companies?

1.4 Objective of the Study

The objective of the dividend policy is to maximize the shareholder's wealth. Here, the main objective of this study is to compare dividend policy between Himalayan Bank, Everest Bank and NABIL bank Limited.

- a. To analyze the existing dividend practices of sample banks in terms of DPS, DPR, EY, DY, Market value per share to Book value per share and Net worth per share.
- b. To analyze the relationship of dividend with earning per share, market price per share.
- c. To find out the effect on market value per share due to DPS and EPS.
- d. To find out significance difference between mean of DPS, DPR and DY of sample commercial banks.
- e. To provide suggestion on the basis of findings.

1.5 Significance of the study

The study will be very helpful since we can learn about the dividend policy of the chosen companies which will represent the banks. Nowadays, a large number of people are attracted to invest in shares with intension of getting greater return. Study will provide to be valuable tools for the following groups.

- a. **Shareholders:** The shareholders will know whether the dividend policy of the company is relevant or not and the position of the company in the financial market.
- b. **Banks:** The bank will know the dividend practices followed by other banks and will also to improve their dividend policy.
- c. **Students:** It will be helpful as they can take it as reference if they are doing the research in similar topics.
- d. **Teachers:** Teacher can use it as tool in teaching.
- e. **Researcher:** Researchers can use it as a reference for their research.

1.6 Limitation of the Study

There are several aspects of decision that should be under taken by financial manager to achieve the management goal. Investment, capital structure, liquidity, leverage, dividend and others are area of financial management. The research is going to be done for the partial fulfillment of the requirement of master's in business studies program. There are certain limitations which are as follows:

1. Only secondary data are used.
2. This study covers the data for only 5 years, (2005/06, 2006/07,2007/08, 2008/09 & 2009/10)
3. Only three banks are taken for the comparative study of dividend policy of the banks.
4. This study is an interpretation.

1.7 Organization of the Study

The report will be presented in five chapters which are as follows:

Chapter – 1: Introduction

Chapter – 2: Literature Review

Chapter – 3: Research Methodology

Chapter – 4: Data presented and Analysis

Chapter – 5: Summary, Conclusion and Recommendations

Chapter – 1: Chapter one contains the subject matter, describes general background of the study, statement of the problem, objectives of the study, significance of the study, research methodology and limitation of the study and organization of the study.

Chapter – 2: In this second chapter, various books, journals and other thesis are reviews so that we can obtain the detail information of the work we are going to do. It includes a discussion on the conceptual framework and review of the major studies.

Chapter – 3: In the chapter, the method used in the research is described; various financial and statistical tools are discusses in this chapter.

Chapter – 4: In this chapter, the collected data are analyzed concerning the dividend policy of the sampled companies. It also includes the major findings of the study.

Chapter - 5: This chapter states summary, conclusion, recommendations and major findings of the study.

CHAPTER – TWO

REVIEW OF LITERATURE

2.1 Conceptual Framework

Dividend is that portion of earning of the company that is distributed to the shareholders in return of their investment in share capital. They can be in the form of cash, stock of property & retained earnings. Dividend policy is an integral parts of financial management decision in business organization that target at maximizing the shareholder's return so that the value of their investment is maximized. It is relevant with all institutions who mobilize funds in terms of return and investment. By the dividend policy we mean some kind of consistent approach to the distribution versus retention decision, rather than making the decision on the purely ad-hoc basis from period (*Shrestha, Financial Management, 1980:640*).

The dividend policy determines the amount of earnings to be distributed to shareholders and the amount to be retained in the firm. Dividend policy determines the division of net earnings between payment to stockholder and the amount retained by the firm. There is reciprocal relation between retained earnings and cash dividends. That is to say if retained earnings are kept more by the company less will be dividend and vice versa. In other word, the firm has to choose in between distributing profit to shareholders and retaining them in business. The choice should be guided by the given objective of maximizing the present value of future cash flows in each case. Any change in dividend policy has both favorable and unfavorable effects on the firm's stock price. Higher the dividends higher the immediate cash out flow to investors which is good for the investors, but lower future growth, which is bad for long term plans of the organization. Therefore the dividend policy should be optimal which balances the opposing forces and maximizes stock price.

Bonus share refers to free share stock that are extended to the current shareholders of a company, without need for the shareholders actually purchase the additional shares. An issue of bonus share represents distribution of shares in addition to the cash dividend to the existing shareholders. This has the effects ^{of} increasing the number of

outstanding share of the company. The declaration of bonus share will increase the paid up share capital and reduce the reserve and surplus of the company (*Pandey, Financial Management, 1989; 706*). The total net worth is not affected by bonus issue.

Capital gains and dividend yields are two forms of return from the purchase of common stock. The profit on selling common stock gives the capital gain. So, shareholders expect an increase in market value of the common stock over time. The major motive for paying dividend is to convey information to shareholders that the company is doing good. Managers believe that the shareholders are not indifferent towards dividends and retained earnings. So, financial manager must take into consideration various conflicting factors like net earnings, availability of cash, past dividend payments, changing price of stock, and etc. which influence dividend policy before deciding the allocation of the company's earnings into dividend and retained earnings.

The amount to be paid as dividend is always a matter of controversial topic. Dividends are desirable from shareholders point of view whereas retention of earning is desirable for the growth of the firm. This may cause conflict in interest between the investors and organizations.

Theoretically it is not a thing of value of the shareholders unless cash dividend per share remains unchanged or are increased. Stock dividend may serve to keep the market price per share in a popular trading range. A more effective device for reducing market price per share is stock split. But stock dividend and stock split appear to how informational affects. When other things are held constant, share price tends to rise around the time of announcement, consistent with the positive signal (*Horn, Financial Management and Policy, 1993; 328*).

Dividend policy affects the financial structure, the flow of funds, corporate liquidity and investor's attitudes. It is one of the central decision area related to policy seeking to maximize the value of firms common stock. If firm increases the retained earnings, shareholders' dividend decreases that result to an increase in market price of the shares. Under such a condition, dividend policy helps the decision makers to decide the percentage of net earnings to be distributed to the investors.

Conflicting concepts on dividend:

Basically there are two schools of thought concerning dividend policy. One is associated with Myron Gordon and John Linter who is of the view that dividend yield is less risky than the expected capital gain. Investors give more emphasis on to the present dividend than the future capital gain. They are not indifferent to return in the form of dividend and retained earnings. The earning of a firm with a low payout ratio is typically capitalized at higher rates than the earning of a high payout firm, other things held the same. This concept is also known as relevant concept of dividend.

Second thought, also known as irrelevant theory of dividend, is associated with Merton Miller and Franco Modigliani who holds the view that investors are indifferent to returns in form of dividend of retained earnings. When firms raise or lower the dividend, their stock prices tend to rise or fall in like manner. The capacity of the firm to make future earnings determines the value of the firm and that the manner in which the earnings are split between dividends and retained earning does not affect the value of firm.

2.1.1 Dividend theories

a) The Residuals theory of Dividend:

Dividend is taken as the residue amount of earnings left after investing it in projects with higher return. If expected return on the investment is higher, first profits are invested in those projects and then residue is distributed as dividends. It is because investment made from internal source costs less due to lack of floatation and other cost than from external sources.

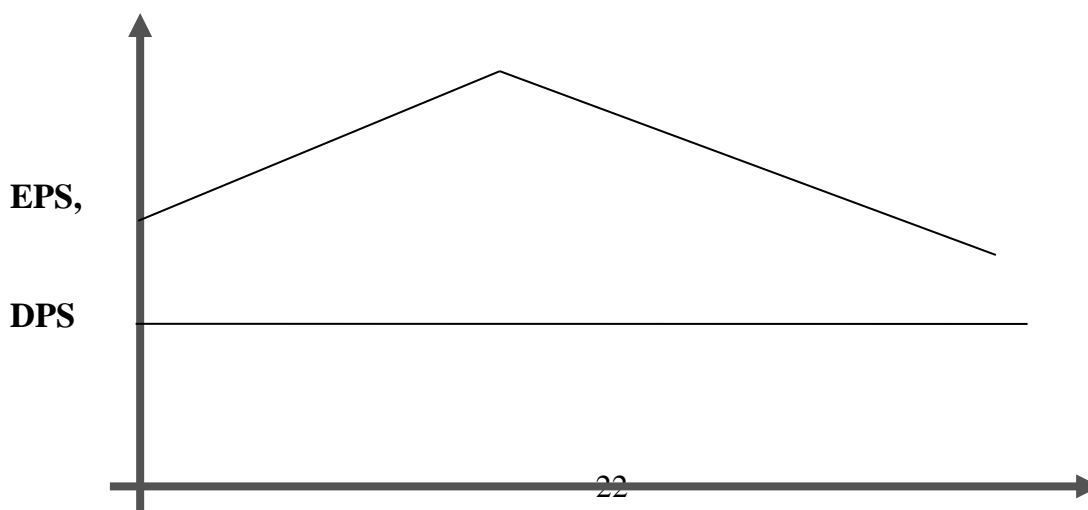
The residual dividend policy states, the profit should be used first in all profitable projects. Investment opportunity schedules (IOS), weighted average cost of capital (WACC), optimal capital structure are use as the base for investment proposal. The amount of dividend payout will fluctuate from period to period due to acceptable investment opportunities available to the firm.

Although the residual theory of dividends appears to make further analysis of dividend policy unnecessary, it is indeed not clear that dividend are solely a means of disbursing excess fund. It concludes that there are not other implications of dividend policy. This study shall take a closer look at the relationship between dividends and value. The residual dividend emphasizes that dividend decision should reinvest the profits to the optimum investment level which reflects maximum returns. If earning are more than enough for investment plans then dividend is to be paid.

b) Stability of Divided:

Stability of dividends is another major aspect of the dividend policy of a firm. The term dividend stability refers to the consistency or lack of variability in the stream of dividends. It means that certain amount of dividend is paid out regularly. Constant dividend policy is based on the payment of fixed rupees dividend in each year. It is easy to follow this policy when earning are stable but when company's earning pattern shows wide fluctuation, it will be difficult to maintain.

i. Constant Dividend per Share: Payment of a fixed amount per share as dividend in each year period is constant dividend policy. The dividend policy of paying a constant amount of dividend per year treats common shareholders somewhat like preference shareholders without giving any consideration to investment opportunities within the firm and the opportunities available to shareholder. This policy pays fixed amount per share as dividend every year without considering the fluctuation in the earning of the company.

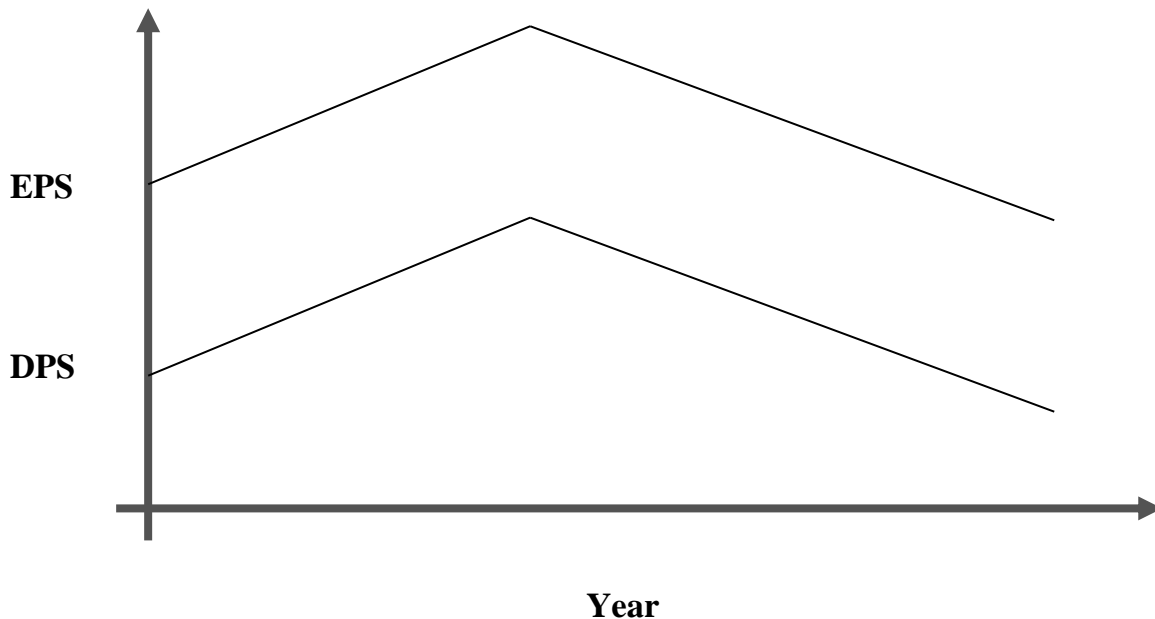


Year

(fig: constant dividend per share policy)

ii. Constant payout Ratio: Constant payout ratio is based on payment to earnings remains fixed. The payout ratio is the ratio of dividend to profit. A number of companies follow a constant percentage of profit for dividend distribution. With this policy the amount of dividend will fluctuate in direct proportion to earnings. It depends upon company's ability to pay dividends. If company incurs losses no dividend shall be paid regardless of desires of shareholders.

The dividend policy of paying a constant amount of dividend per year treats common shareholders somewhat like preference shareholders without giving any consideration to investment opportunities within the firm and the opportunities available to shareholders.



(fig: constant dividend payout policy)

c. Low Regular Dividend plus Extras: This policy have a provision of providing a certain amount of regular dividend plus extra dividend based on performance of the firm. Under this policy, a firm usually pays a fixed dividend to the shareholders and in years of marked prosperity, additional or extra dividend is paid over and above the

regular dividend. "This type of dividend policy enables a company to pay constant amount of dividend regularly without a default and allows a great deal of flexibility for supplementing the income of shareholders only when company's earnings are higher than the usual, without committing itself to make longer payments a part of the future dividend" (*Pandey, Financial Management 1999:780*). It is best method when firm's earning is volatile.

Payment Procedure: Payment procedures includes as follows:

- i. Declaration Date:** It refers to the date on which directors meet and declare the dividend.
- ii. Holder of Record Date:** The dividend is payable to shareholders whose names appear in the register of member as on the record date.
- iii. Ex-dividend Date:** The date when the right to the dividend leaves the stock is called the ex-dividend date. It is generally of four day before the record date in use.
- iv. Payment Date:** The date company actually mails the checks to the holders-if-record date.

2.1.2 Forms of Dividend

Dividend is distributed in several forms due to changing needs, objectives and policies of corporations. Cash and stock dividend are most popular form of dividend in Nepal. "The types of dividend that corporations follow is partly a matter of attitude of directors and partly a matter of a various circumstances and financial constraint that bound corporate plans and policies"-*Shrestha, Financial Management, 1980:670*. Considering the nature and changing needs of corporation dividend is being distributed in several forms. They are as follows:

a) Cash Dividend:

Cash dividend is the portion of earnings distributed to the shareholders in cash to convey information that the company is doing good. Cash dividend is paid to the investors in proportion to their shares of the company that reduce cash balance of the firm. The firm has to maintain adequate balance of cash for the payment of cash dividend if not, funds need to be borrowed. Both total assets and net worth of company are reduced when cash dividend is distributed. The market price of share

drops in most cases by amount of cash dividend distributed. That's why corporation should wisely make decision regarding payment of cash dividend.

b) Stock Dividend or bonus shares:

Stock dividend shares a distribution of additional shares i.e. bonus shares as dividend to the existing shareholders in proportionate basis so that proportionate ownership is the same. "A stock dividend occurs when the board of directors authorizes a distribution of common stock to the shareholders. Its payment simply involves transferring a portion of retained earnings to capital stock account". Stock dividend increases the number of outstanding shares of the firm's stock. Stock dividend does not have a real value, firms pay stock dividend as a replacement for a supplement to cash dividend. In fact, a bonus issue represents a recapitalization of the owners' equity portion, i.e., the reserves and surpluses (*Pandey, Financial Management, 2000:775-776*).

c) Interim Dividend:

Generally dividend is declared in the last of the financial year. This is called regular dividend. Many times directors can declare the dividend before the end of the financial years. This is called interim dividend.

d) Property dividend:

Also known as liquidating dividends, it involves payment of assets (property except cash) as dividend. This method is used when there are assets that are of no longer use in the business. Payments through securities of subsidiaries, products owned by company are some examples. This is rarely used specially in extra ordinary circumstances exits. The payments of dividend as subsidiary company's shares in place of cash paid to them are of less value therefore they are paid.

e) Bond Dividend:

Companies can give dividends in the form of bonds. These bonds are of long term nature. The company distributes dividend in form of its own bond with a view of avoid cash outflows. The stockholders become secured creditors if the bond carries lien on assets. Bond dividend carries relatively longer maturity period than that of scrip dividend.

f) Composite Dividend:

The dividend which is paid partly in the form of cash and partly in the form of property, then the dividend is said to be composite dividend.

g) Optional Dividend:

This is not the separate method in itself but the choice of stockholders between cash and stock dividend for their share of dividend. In optional dividend company provides option to its shareholders to take the dividend in cash or in property.

h) Scrip Dividend:

It is distribution of dividend to stockholders in the form of promissory notes to be paid in future date i.e., matured in certain future date. These notes are known as certificates or scrip. This method is used when company is in lack of adequate cash balance temporarily but has earned profit. The promissory notes may or may not be interest bearing.

In the context of Nepal, only cash and stock dividend are mostly practiced.

2.1.3 Bonus Share and Stock Split

Bonus share and stock split are same in the case of outstanding shares but it is different in their accounting treatment. In case of bonus share, the balance of the reserve and surplus account decrease due to a transfer to the equity capital and the share premium accounts. The par value per share remains unaffected. In the other hand share split, the balance of the equity accounts does not change, but the par value per share changes. The earning per share will be diluted and the market price per share will fall proportionately with a share split. But the total value of the holdings of a shareholder remains unaffected with a share split.

Bonus issue is similar with stock splits from the economic point of view, though there is some difference from the accounting point of view. In a stock split there is no change in the total account or surplus.

2.1.4 Bonus Share Vs New Share Issue

The bonus share differs from an issue of a new equity. If a firm needs to finance it can also obtain fund by selling new shares. To sell new share in markets a company must

be bear flotation costs. If a company is concerned about maintaining control and flotation costs are high, it might be reluctant to sell new common stock. Thus to save the flotation cost and to avoid the difficulties in rising external equity a company exercise rising the additional capital from internal sources. A company can use bonus share as a less expensive alternative source of capital. It minimizes flotation cost and control management by existing shareholder.

2.1.5 Bonus Share Vs Cash Dividend

The bonus share issue are share issued free of charge to share holder. The size of the issue reflects the improved value of the company's assets. They may sometimes be issued instead of dividends. The distribution of stock dividend in various circumstances becomes an effective method of conveying of the shareholders an assurance about the profitable reinvestment of the retained profits. But there is no obligation on the management to insure that the reinvestment of past accumulated profits and reserve. Therefore most investors express serious doubts about the retained profits being taken at their face value or being invested in sufficiently remunerative schemes.

Most companies pay dividends in cash. Sometimes cash dividend may be supplemented by bonus issue. A company should have enough cash in its bank account when cash dividends declared. The cash account and the reserves account of a company will be reduced when the cash dividend is paid. Thus both the total assets and net worth of the company are reduced when the cash dividends distributed. The market price of the share drops in most cases by the amount of the cash dividend distributed.

One seems to be left with the conclusion that these companies which retain a relatively high proportion of profit select relatively unprofitable investments. The present result therefore seems to lend some weak support to the view that institutional or fiscal arrangement which limit dividends are relatively inefficient method of increasing investments.

These are the reasons that the market assigns several times more weight to dividends than to retained income. But if management is able to assure convey to the

shareholders about one profitable reinvestment of the retained profit.

2.1.6 Factors Influencing Dividend Policy

Deciding the portion of earning to be distributed as dividend and to be retained in business is important aspect of financial analysis. Shareholders desire more dividends to increase their wealth whereas firm desire retained earnings to exploit investment opportunities. Firm's decision about its dividend is influenced by many considerations; some of them are unique and some are general to the company. Therefore, it is very important to describe the factors which affect dividend decision.

General considerations are given below:

- a) **Legal Rules:** Legal rules of dividend policy are different from different countries. They provide the frame work within which dividend policies can be formulated. Following are some rules associated with it:
 - i) The surplus rule: Dividend should be paid only out of profit. No surplus means no dividend.
 - ii) Capital impairment rule: Dividend is not paid when it cause capital to be impaired i.e., dividend should not be paid out of paid-up capital.
 - iii) The insolvency rule: dividend is not paid if the payment results insolvency or if the firm is in insolvency. (i.e. when liabilities exceed assets)
- b) **Profit rate:** The expected rate of return on assets determines the paying out earnings in the form of dividend to stockholder or using retained earnings to acquire assets for the firm. If rate of return on investment is higher than required rate of return then retained earnings is preferred. If not, shareholders will better off with cash dividend.
- c) **Access to the capital market:** A large and well reputed firm has easy access to capital market for external financing than smaller and new firm. Big firms can pay higher dividend than small firm. Thus, the small and new firm must retain more earnings to finance its operation and for additional investment in future.
- d) **Stability of earnings:** stability facilitates predictability. A firm that has relatively stable earnings is often able to predict approximately what its future

earning will be. The more stable the income stream, higher the dividend payout ratio, than the firm with fluctuating earnings. The unstable firm is not certain that in subsequent years the expected earnings will be realized, 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.

- e) **Control:** Dividend policy may be influenced by shareholder or management's control objectives. This policy is defended on the ground that raising funds by selling additional common stock dilutes the control of the dominant group in that company. At the same time, selling debt increases the risks of fluctuating earnings to the present owners of the company. Control oriented owners prefer using debt and retained profit to finance new investment rather than issue stock. Reliance on internal financing in order to maintain control reduces the dividend payout.
- f) **Need to repay debt:** a firm can issue debt to finance expansion or to substitute other forms of financing. Firm can refund the debt at maturity by replacing it with another form of security or it can make provisions for paying off the debt. If a firm wants to retire the debt by the way of accumulating provision for paying off the debt, retention of earnings will be necessary.
- g) **Liquidity position:** Liquidity position also influences dividend decision. If firms do not have enough cash despite the good profit it may not provide cash dividend. A growing firm, even a profitable one, typically has a pressing need for funds. In such a situation the firm may not pay cash dividends.
- h) **Rate of asset expansion:** When a firm is growing it needs more funds for its asset expansion. The greater the need of funds, the more likely is the firm to retain earnings rather than pay them out as dividend.
- i) **Restrictions in debt contracts:** Debt. Contracts, particularly when long-term debt is involved, firm's ability to pay cash dividends frequently restricted. Such restrictions, which are designed to protect the position of the lender, usually state that:
 - Future dividend can be paid only out of earnings generated after the signing of loan agreement.

- That dividend cannot be paid when net working capital is below a specified amount. Similarly preferred stock agreement generally states that no cash dividends can be paid on common stock until all accrued preferred dividends have been paid.
- j) Tax position of stockholders:** The tax position of stockholders also affects dividend policy. The shareholders with high tax bracket prefer to take income in the form of capital gains rather than cash dividend. But the low tax bracket shareholders prefer cash dividends. Thus, the dividend policy to some extent is determined by the type of stockholders it has.
- k) Past dividends:** A firm record of past dividend payment strives to maintain the same in the future. Dividends are habit forming. If the market doesn't receive its expected dividend, the stock price will suffer. "The majority of firms surveyed indicated they would maintain their current dividend payments even if they were operating at a net loss for an interim period".
- l) Historical based accounting:** Our current practice of historical accounting neglects change in price level. Non-cash expense like depreciation is charged on original cost that causes the accumulated fund to be inadequate for its replacement. This inadequacy is fulfilled by retained earnings that reduces dividend payout ratio.
- m) Desire of shareholders:** Shareholders may have separate interest regarding dividend incomes and capital gains. Generally the company should adopt a dividend policy which serves the purpose of the dominant group. However it doesn't totally reject the interest of other shareholders.

2.2 Legal provisions and prevalent practices regarding dividend practices in Nepal:

Nepal lacks clear provisions regarding dividend policy. Nepal stock exchange, stated on the Security Exchange Act 1983, is responsible to undertake required action to protect shareholders interest. However this organization has not been able to protect shareholders interest and attitude of the BOD that plays dominant role in management

of public limited companies and they are generally in majority who are nominated by government.

According to corporation act, corporations must set aside a certain part of profit as reserves before the declaration of dividend and need to separate the tax provision prior to dividend declaration.

Legal provisions as per Nepal Company Act 2006 (B.S 2063) that plays important role in dividend practices are given below:

Section 2(p): Bonus share or stock dividend means shares issued in the form of additional shares to shareholders by capitalizing the surplus from the profits or the reserve fund of the company. The term also denotes an increase in paid-up values of shares after capitalizing surplus fund.

Section 61: A company cannot purchase its own shares or supply loans against the security of its own shares.

Section 179:

Subsection 1: A company may, by adopting a special resolution in the general meeting, issue bonus shares to its shareholders, out of the amount available for the distribution as dividend.

Subsection 2: when a company has to issue bonus shares pursuant to subsection 1, the company shall give information to the office before issuing such shares.

Section 182:

Subsection 1: the dividends shall be distributed among the shareholders within 45 days from the date of decision to distribute it except in the following circumstances:

- i) When law forbids the distribution
- ii) In case the right to dividend is disputed
- iii) In case dividends cannot be distributed within the time limit mentioned above owing to circumstances beyond anyone's control and without any fault on the part of the company.

Subsection 2: A company fully or partly owned by the Government of Nepal may distribute dividend only after obtaining prior approval of the government of Nepal who may give necessary directive on the matter of dividend to be distributed by such company.

Subsection 3: In the event of failure in distribution of dividend within time limit mentioned in subsection 1, this shall be done by adding interest at prescribed rate.

Subsection 4: 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.

Section 183: The BOD is required to bring a special resolution for consent and approved by $\frac{3}{4}$ of its shareholders present an annual general meeting of the company. The bank should obtain a prior approval of NRB before AGM. Free reserve should not be less than 50% of paid up capital of the company after issue of bonus share. This provision is not applicable in case such issuance is as per the guidelines of the regulatory body.

Subsection 5: A company shall not pay dividend any manner except out of the amount of profits set aside for distribution of dividend.

Subsection 7: the BOD may, in the following circumstances, distribute interim dividend out of the profits of previous year:

- Where the articles of association contains a provision on distribution of interim dividend
- When annual financial statements of profits of year is certified by auditors which is to be used to pay interim dividend.
-

Subsection 9: Dividend not claimed by any shareholder even after expiry of a period of five years after the date of resolution adopted by the company in its general meeting to distribute dividend shall be credited in the investor protection fund established under section 183.

2.3 For more detail the following studies are also explained here.

Modigliani and Miller's Study (1961) conducted a study on the irrelevance of dividend policy in shareholder's wealth. The study is also identified as M-M analysis or dividend irrelevance model. The article published is the most comprehensive argument for the irrelevance of dividend i.e. dividend policy has no effect on the share price of the firm. They argue that the value to the firm depends on the firm's

capabilities to earnings, which results from its investment policy. Thus, given the investment of the firm, dividend decision, the policy of dividing earnings between dividends and retained earnings, has not significance in determining the value of the firm. As this theory takes dividend policy as financing decision, it is taken as a residual decision and dividend are passive residuals.

The study of irrelevance of dividend is based on the following assumptions:

- The firm operates in perfect capital market. All investors are rational and information is freely available. Securities are perfectly divisible and investors can't influence price of securities.
- There are no taxes, no flotation costs(i.e. no commission or brokerage cost).
- The firm has a fixed investment policy which is not subject to change.
- Risk of uncertainty does not exist.
- Every investor is certain as to future investments, prices, dividend and profits of the firm. So one discount rate is applicable for all securities all the time i.e. $r=k=kt$.

They provided the proof in support of their argument in the following ways.

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.

$$P_0 = \frac{D_1 + P_1}{1 + K_e} \dots\dots\dots eq^n (i)$$

Where,

P_0 = market price at the beginning or at the zero period

K_e = cost of equity capital (assume constant)

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

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

Step 2:

Multiply both sides of the equation (i) by the number of shares outstanding (n), we obtain the total value of firm

$$n P_0 = \frac{n(D_1 + P_1)}{1 + K_e} \dots\dots\dots \text{eq}^n(\text{ii})$$

Where,

n = number of equity shares at zero period

Step 3:

If the firm's internal sources of financing its investment opportunities fall short of the funds required and Δn is the number of new shares issued at the end of year 1 at price P_1 , then

$$n P_0 = \frac{n D_1 + P_1(n + \Delta n) - \Delta n P_1}{1 + K_e} \dots\dots\dots \text{eq}^n(\text{iii})$$

Where,

n = No. of shares at the beginning

Δn = no of equity shares issued at the end of the period

Step 4:

If the investment projects of a firm in a given period of them can be financed either by retained earnings or by the issues of new share or both. Thus, the amount issued will be:

$$\Delta n P_1 = I - (E - n D_1)$$

Or,

$$\Delta n P_1 = I - E + n D_1 \dots\dots\dots \text{eq}^n(\text{iv})$$

Where, $n P_1$ = the amount obtained from the sale of new shares to finance capital budget

I = the total amount required of capital budget

E = earnings of the firm during the period

E - $n D_1$ = retained earnings

Step 5:

By subtracting the value of $\Delta n P_1$ from equation (iv) to equation (iii) we get,

$$n P_0 = (n D_1 + (n + \Delta n) (P_1 - 1 + E - n D_1)) / (1 + K_e)$$

Or,

$$n P_0 = \frac{(P_1(n + \Delta n) - 1 + E)}{1 + K_e}$$

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.

In this way, according to M-M study, it seems that under conditions of perfect capital markets, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend policy may have no influence on the market price of the shares.

In Nepalese context, this theory has little application as the assumption of this theory don't meet the context in Nepal like rational investors, full knowledge, absence of floatation costs and taxes, etc.

Walter's Study (1966) conducted a study on dividend and stock price. According to him, the dividend policy of a firm cannot be looked aside from investment policy. His argument is just the opposite of what Modigliani and Miller said. Walter argued that dividend policy affects the stock prices i.e. dividend is relevant with stock price. The relationship between firm's internal rate of return and cost of capital is determining factor to retain profits or distribute dividends. As long as the internal rate is greater than cost of capital, the stock price will be enhanced by retention and will vary with dividend payout.

Basic assumptions of this model are as follows:

- The firm finances all investment through retained earning that is debt or new equity is not issued.
- The firm's internal rate of return (r) and its cost of capital (k_e) are constant.
- All earnings are either distributed as dividend or reinvested internally immediately.
- The values of EPS and DPS are assumed to remain constant forever in determining a given value
- The firm has a very long or infinite life.

Considering the above assumption, Walter's model to determine the market price per share is as follows:

$$p = (DPS + r/k_e(EP - DPS))/k_e$$

Where,

p = Market price per share

DPS = Dividend per share

EPS = Earnings per share

r = Internal productivity of retained earning

k_e = cost of equity or market capitalization rate.

According to him, the optimum dividend policy depends on the relationship between the firm's internal rate of return ' r ' and its cost of capital ' K_e '.

According to him firm may have three situations which are as follows;

Growth Firm ($r > k_e$)

Growth firm are rapidly expanding ones. If the firm's internal rate of return exceeds the cost of capital, the relation between dividends and stock price is negative i.e. more dividends of rapidly expanding firm leads to low stock prices and optimum payout ratio is zero. Walter argued that zero dividends would maximize the market value of share for growth firm.

Normal Firm ($r = k_e$)

If the firm's cost of capital and return on investment is the same there is no effect of dividend on stock price. This type of firm is referred as normal firm. In this type of firm, dividend payout ratio does not affect the share price.

Declining Firms ($r < k_e$)

In Walter's model, the dividend policy of the firm depends on the availability of investment opportunities and relationship between the firm's internal rate of return (r) and cost of capital (k_e). Shareholders of such firm would prefer earning to be distributed to them as dividend because distributed amount can be invested elsewhere to get higher rate of earnings than the earning from the declining firms. By distributing the entire earnings as dividend the market value of share will be increased to the optimum level. Thus, the optimum dividend payout ratio for a declining firm is 100%.

Conclusion:

When the firm is in growth stage, then dividends are negatively correlated with stock prices. In the declining firms, dividends are positively correlated with stock prices. In the normal firm there is no relationship between dividends and stock prices.

Criticism of Walter's theory;

- i) No external financing: this theory neglects investment through external sources like debt, new equity etc. that causes firm's investment and dividend policy to be sub-optimal.
- ii) Constant rate of return(r) and opportunity cost of capital(k): rate of return changes with change of investment i.e. it don't remain constant as this theory assumes.

Linter's Study (1956) made a study focusing on the behavioral aspect of dividend policy in the American context. He investigated a partial adjustment model by analyzing the dividend patterns of 28 companies. According to John Linter's study, dividends are 'sticky' in the sense that they are slow to change and lay behind shifts in earnings by one or more period.

The objectives are as follows:

- To identify occasions when a change in dividends might well have been under active consideration even though no change was made.
- To determine the factors that existed most actively into dividends.

He found out that a major portion of the dividend of a firm could be expressed in the following way:

$$DIV_t^* = PEPST \quad \text{----- (i)}$$

$$\text{and } DIV_t - DIV_{t-1} = a + b (DIV_t^* - DIV_{t-1}) + e_t \quad \text{----- (ii)}$$

$$\text{or, } DIV_t = a + b DIV_t^* + (1-b) DIV_{t-1} + e_t \quad \text{----- (iii)}$$

Where, DIV_t^* = Firm's desired payment

EPST = Earnings

P = targeted payout ratio

a = constant relating to dividend growth

b = adjustment factor relating to the previous period's dividend and new desired level of dividends where $b < 1$

The major findings of this study were as follows:

- Firms generally think in terms of proportion of earnings to be paid out.
- In order to modify the pattern of dividend, investment opportunities, liquidity position, funds flows are not considered.
- Firms generally have target payout ratio in view while determining change dividend rate on dividend per share.

Myron Gordon's Study(1962) stated that dividend policy of a firm affects its value. This theory is the modified form of Walter's model. According to him dividend policy of a firm affects its value even in a situation where the return on investment and required rate of return on investment are equal. It is assumed that current dividend is less risky than capital gain. The conclusion of his study is that investors prefer present dividend more than future capital gain due to condition of uncertainty of capital gain. Therefore this model is also known as "a bird in hand argument". His argument stated that an increase in dividend payout ratio leads to increase in the stock price for the reason that investors consider the dividend yield (D_1/P_0) is less risky than the expected capital gain.

This model is based on following assumptions:

- The firm uses equity capital only. No external financing is used and investment programmes are financed exclusively by retained earnings.
- The internal rate of return (r) and costs of capital (k_e) are constant.
- The firm and its stream of earnings are perpetual.
- The corporate taxes are ignored.
- The retention ratio, b , once decided upon is constant.
- Thus the growth rate, $g = b_r$, is constant forever.
- The discount rate is greater than growth rate, $k > b_r = g$.

According to Gordon, the market value of share is equal to present values of future streams of dividend. A simplified version of Gordon's model can be symbolically expresses as:

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

Where, p = price of share

E = earnings per share

b = retention ratio

1-b = percentage of earnings distributed as dividend

E(1-b) = Dividend per share

k = capitalization rate or cost of capital

b_r = Growth rate in r i.e. rate of return on investment of an all equity firm.

This model is also known as “Growth Model”. According to his model, the following facts are revealed. In the case of growth firm, share price tends to decline in correspondence with increase in payout rate or decreases in retention ratio i.e. high dividend corresponding to earnings leads to decrease in share price. Therefore, dividends and stock prices are negatively correlated in growth firm. In the case of normal firm, share value remains constant regardless of changes in dividend policies. It means dividend and stock prices are free from share prices tend to rise in correspondence with rise in dividend payout ratio. It means dividends and stock prices are positively correlated with each other in a declining firm.

Limitations of Gordon’s model:

Since it is modified form of Walter’s study, the unrealistic assumptions like constant r and k, absence of tax liabilities are its limitations.

Van Horne and Mc Donald's Study (1971) conducted a comprehensive study on dividend policy and new equity financing. The purpose of this study was to investigate the combined effect of dividend policy and new equity financing decision on the market value of the firm's common stocks. They explored some basic aspects of conceptual framework and empirical tests were performed during year end 1968 in

two industries using a well-known valuation model, i.e. a cross-section regression model. The required data were collected from 86 electric utility firms included on the COMPUSTAT utility data tape, continental U.S and 39 firms in the electronics and electronic component industries as listed on the COMPUSTAT industries data tape.

They tested two regression models for the utilities industries:

First Model was:

$$Po/Eo = a_0 + a_1(g) + a_2 (Do/Eo) + a_3 (Lev) + U$$

Where, Po/Eo = Closing market price in 1968 divided by average EPS for 1967 and 1968

g = expected growth rate, measured by the compound annual rate of growth in assets per share for 1960 through 1968

Do/Eo = Dividend payout measured by cash dividend in 1968, dividend by earning in 1968

Lev = Financial risk, measured by interest charges dividend difference of operating revenue and operating expenses.

U = Error term

The second Model was:

$$Po/Eo = a_0 + a_1(g) + a_2(Do/Eo) + a_3(Lev) + a_4(Fa) + a_5 (Fb) + a_6 (Fc) + a_7 (Fd) + U$$

Where,

Fa , Fb , Fc and Fd are dummy variables corresponding to "New issue ratio" (NIR) groups A through D.

It is noted that they grouped the firms in five categories A,B,C,D and E by NIR. For each firm the value of dummy variables representing its NIR group is one and the value of remaining dummy variables is zero.

Again, they tested the following regression equation for electronics components industry.

$$Po/Eo = a_0 + a_1(g) + a_2 (Do/Eo) + a_3 (Lev) + a_4 (OR) + U$$

Where,

Lev = financial risk, measured by long-term debt plus preferred stock dividend by net worth as of the end of 1968.

OR = Operating risk, measured by the standard error for the regression of operating earnings per share on time for 1960 through 1968, and rest are as in first model above.

By using these models, they compared the result obtained for the firms which both pay dividends and engage in new equity financing with other firms in an industry sample. They concluded that for electric utility firms in 1968, share value was not adversely affected by new equity financing in the presence of cash dividends, except for those in the highest new issue group and it made new equity a more costly form of financing than the retention of earning. They also indicated that the payment of dividends through excessive equity financing reduces share prices.

Chawala and Srinivasan's study(1987) conducted a study on impact of dividend and retention on share price. Eighteen chemical industries and thirteen sugar industries were selected for study basis objective of the study were.

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

They used lagged earning price ratio instead of lagged price earning ratio. Simultaneous equation model as developed by Friend and Puckett in 1964 was used.

1. Price function: $P_t = F[D_t, R_t(P/E)^1(t-1)]$

2. Dividend supply function, $D_t = [E_t, D(t-1), P/E (t-1)]$

Where,

P = market price per share

D = Dividend per share

R= Retained earnings per share

E = Earnings per share

P/E = Deviation from the sample, average of P/E ratio

t = subscript for time

They collected the required data from the official directory of Bombay stock exchange. They used two stage least square technique for estimation and in case of chemical industry they found the estimated co-efficient had the correct sign and co-

efficient of determination of all the equation were very high. It implies that the stock price and dividend supply variation can be explained by their independent variables. But, in case of sugar industry, they found the sign for retained earnings to be negative. Finally they concluded that dividend hypothesis hold well in the chemical industry that both dividend and retained earnings significantly explain the variation in share price in chemical industry. They also stressed that the impact of dividend is more pronounced than that of he retained earnings but the market has started shifting towards more weight for retained earnings.

2.4 Review of articles and journals

There are a few studies in Nepal which have looked into corporate dividend behavior. Out of those two major studies are reviewed as follows:

Shrestha,Manohar Krishna(1981)in his article gives short glimpse of the *Dividend performance of some public enterprises* of that time in Nepal. Dr. Shrestha has raised the following issues:

HMG expects two things from the public enterprises

- i. They should be in a position to pay minimum dividend and
- ii. Public enterprises should be self-supporting in financial matter in future year to come.

But both these objectives are not achieved by public enterprises

One reason for this inefficiency is caused by excessive governmental interference over daily affairs even though there is provision of government interference only for policy matters. On the other hand, high ranking officials of HMG appointed as directors of board do nothing but simply show their bureaucratic personalities. Bureaucracy has been the enemy of efficiency and thus leads corporation to face losses. Losing corporations are therefore, not in a position to pay dividend to government.

Another reason is the lack of self-criticism and self-consciousness. He has pointed out that lack of favorable leadership is one biggest constraint to institution building. Moreover, corporate leadership come as manager are not ready to have self-criticism. In fact, all so-called managers of corporation have not been able to identify

themselves regarding what they can contribute as manager of corporations. So, HMG must be in a position to develop a financial target on corporate investment by imposing financial obligation on corporations.

The article points out the irony of government biasness that government has not allowed banks to adopt an independent dividend policy and HMG is found to have pressurized on dividend payment in case of Nepal Bank Limited regardless of profit. But it has allowed RastriyaBanijya Bank to be relieved from dividend obligation despite considerable profit.

Need of criteria suggested by authors are:

- i. Adopt a criteria guided by policy to drain resources from corporation through the medium of dividend payment.
- ii. Realization by managers about the cost of equity and dividend obligation.,

If HMG wants to tap resources through the following criteria should be followed:

- ✓ Proper evaluation of public enterprises in terms of capability of paying dividend through corporation co-ordination committee.
- ✓ Imposing of fixed rate of dividend by government to financially sound PES.
- ✓ Circulating the information about minimum rate of dividend to all public enterprises.
- ✓ Specific performance criteria such as profit target in terms of emphasis, priorities, timing and planning and developing a strategic plan which is not just a statement of corporation aspiration but must be done to make those aspirations to reality.
- ✓ Identification of corporation objectives in corporations act, company act or special charters so as to clarify public enterprise managers regarding their financial obligation to pay dividend to HMG.

Pradhan,RadheShyam (1993) conducted *a comprehensive study on stock market behavior in a small capital market*. A case of Nepal in 1993 is pertinent to put forth here because he has analyzed various ratios related to dividend and market price of shares. The study was based on pooled cross sectional data of 17 enterprises whose stock was listed in stock exchange centre and traded in the stock market.

The objectives of this study were as follows:

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

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

- ✓ Positive relationship between dividend payout and profitability
- ✓ Positive relation between dividend payout and turnover ratios.
- ✓ Higher the earnings on stocks, larger the ratio of dividends per share to market price per share.
- ✓ Positive relation between dividend payout and liquidity.
- ✓ Dividend per share and market price per share was positively correlated.
- ✓ Negative relationship between dividend payout and leverage ratio.
- ✓ Positive relationship between the ratio of dividend per share to market price per share and interest coverage.
- ✓ Liquidity and leverage ratios are more variable for the stock paying lower dividends.
- ✓ Positive relationship between dividend payout and interest coverage.
- ✓ Earnings assets turnover and interest coverage are more variable for the stock paying higher dividends.

Shrestha and Manandhar (1999) had carried out study on the topic of *Bonus Issue Practices in Nepalese corporate Firms* based on the data collected from 1987 to 1998 for 12 corporate firms.

Major findings and suggestions of this study were as follows:

- The most popular bonus ratio prevalent in Nepalese corporate practices were 1:2, 1:1, 1:0.5 and other than ratios specified above has been found negligible important that accounted for only 39% for remaining 12 bonus ratios
- The amount of bonus issued showed increasing trend during the period under study. During the three sub periods, on an average amount of bonus issue rose by 250% per sub period.

- There was a trend to raise the additional equity capital by capitalizing the reverses and net profits by issuing bonus shares and stock dividends. The average ratio of bonus shares issues to equity capital was found above 0.5.
- The overall average of the bonus issue was noticed among Nepalese Corporate practices. The no. of bonus issue made five times or more were found two corporate firms in number, NABIL and NIC during the study period.
- No consistency in bonus ratio was observed. Only 50% of the bonuses issuing corporate firms were found to follow the consistent policy in bonus issue. Among the corporate firms following the consistent policy of bonus issues were found to have made bonus issue in quick succession. Such corporate firms issued 15 times bonus shares out of 25 times in total in the time interval of one year which accounted for 60% of the cases. Bonus shares occurred at irregular interval and widely vary ratios in 50% of the case of the bonus issue.
- Large corporate firms were found to issue bonus shares more times than small sized corporate firms. The overall average bonus ratios of the corporate firms with equity capital Rs. 50 and under 100 million was found to be as 0.78 which accounted for 19 times out of 36 times bonus issue. Corporate firms over than 20 years were found to have issued bonus shares more times (19) compared to other corporate firms with lesser as which accounted 55% of the cases.
- Corporate firms were suggested to have their bonus share issued plan towards the accomplished of corporate goal.
- Issue of bonus share must be in consistent with the growth and expansion scheme of the corporate firms and justified by increased earnings reduced risk in terms of investment and returns.

Manandhar (2000) entitled *Bonus Share and dividend change empirical analysis in Nepalese Context* is studied to test the lagged structure of dividend and different hypothesis on relationship between Dividend Payout Ratio and other financial factors. He finds out his study based on the data taken from 17 Nepalese corporate firms and covered the period of 1987 to 1998. The analysis covers 35 observations per bonus

dividend rate and 29 samples of the Nepalese corporate firms selected from the listed corporate firms in NEPSE. The samples corporate firms include 5 from banking, 3 from Insurance and Finance companies and 4 from manufacturing, trading and airlines. The study analyzes the actual dividend behavior of Nepalese corporate firms after an issue of bonus share. The conclusions of his study are as follows:

- There is significant relationship between change in dividend policy in terms of DPS and change in lagged earnings.
- There is relationship between distributed lagged profits and dividends. In overall there is a positive relationship between lagged consecutive earnings and dividend per share.
- When change in lagged consecutive earnings is greater than zero, in 65% cases, change in DPS.

2.5 Review of Thesis

Ghimire, Prabin Kumar (2002) has conducted a study on *Dividend policy of listed companies* (with ref to Banks, Finance and Insurance Companies). This study was conducted by taking four sample companies from banking sector.

The main objectives of his studies were as:

- a. To identify the dividend policy of different sample companies.
- b. To identify the regularity of dividend distribution of different listed companies.
- c. To identify the relationship between dividend policy and other financial indicators.
- d. To analyze the relationship between dividend per share market price per share.
- e. To find out whether dividend policy affects value of the firm or not.

His major findings were as follows:

- a. The average earning per share of the bank is satisfactory than finance and insurance companies.
- b. The average dividend per share of the banks is also satisfactory or compared to finance and insurance companies.
- c. DPS of the finance companies are more fluctuating in comparison to banks. Among them HBL has more fluctuating and NGBL being consistent.

- d. Dividend yield of the finance and insurance companies are higher than banks and also more consistent.
- e. Banks are following aggressive dividend policy due to higher DPR where as finance and insurance companies have implemented moderate dividend policy.

These studies cover the data till 1998/99. There are many changes place in last few years. So, it is necessary to carry out a fresh study related to dividend pattern in Nepalese companies. In this study, it has tried to carry out the latest data of the sample companies for analyzing the dividend policies of these companies. Because the earlier studies on dividend have become old and need to be updated due to the rapid changes taking place in financial market of Nepal.

Kuikel (2007) had studied on *Dividend policy and practices of commercial banks in Nepal* taking the three commercial banks as sample using secondary data. His main objectives and findings of the study are as follows:

Objectives:

- Analysis of the effect of dividend on share price.
- Examination of dividend policy and practices in Nepalese commercial banks.

Findings:

- Market price of shares of almost all the banks has been fluctuating. The uncontrolled increase in share price may be due to decrease in bank rate of interest.
- Market value per share has positive impact on EPS in case of all selected sample banks.
- Distribution of dividend is irregular in those banks except Nabil bank ltd.

Thapa (2008) studied on the title *Share price movements of financial institutions after the issue of the right share and bonus shares* was based on secondary data of 4 commercial banks that had following main objectives and findings:

Objectives:

- To know practices of issuing bonus share in related corporate firms.

- To evaluate the changes in market prices per share after allotment of bonus share and right share
- To analyze the reason behind why company want to distribute bonus share to its shareholders.

Findings and conclusions

- The share price of all the banks in sample had decreased after the bonus issue. Also the fall in price is significant.
- However, this also does not follow the theory completely as the share price had not moved up to the theoretical ex-right value expect for EBL. This gives the investor a room for gain from investment in share of such banks for right issue.
- Bonus share issue all the sample companies seemed to follow the theory as the prices have fallen down immediately after the issue of bonus.
- Most of the companies are announcing the bonus share to show the positive impact in investors.
- During the analysis it is found that the share price behavior of some of the companies doesn't follow the theory regarding right and bonus share. One major cause is lack of knowledge about its impact to the secondary market. So SEBON need to organize workshop for the investor.

Dhungel (2009) conducted research on *A study on dividend policy of Everest bank ltd. (EBL) and Bank of Kathmandu ltd. (BOK)*. Secondary data was used in the study with under mentioned objectives and findings:

Objectives:

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

Findings:

- EPS analysis shows that the average EPS of EBL is greater than the average EPS of BOK
- DPS ratio shows that average DPS of EBL is greater than average DPS of BOK.
- The DPR ratio shows that BOK provided more than EBL.
- Shareholders of BOK enjoyed more dividend percent compared to EBL on the basis of MPS.
- EBL remained more successful than BOK in satisfying its shareholders through distributing cash and bonus share dividend.

Bhandari (2009) conducted study on *Dividend policy analysis of commercial banks of Nepal*. She used primary and secondary data for analysis. Statistical as well as financial tools are used. Following are the objectives and findings:

Objectives:

- To identify what types of dividend policy is being followed and whether the followed policy is appropriate.
- To highlight the dividend practices of banks.
- To analyze the relationship between DPS with various important variables such as EPS, net profit, net worth and stock prices.
- To provide a practical suggestion and possible guidelines to overcome various issues and gaps based on the findings of the analysis.

Findings:

- The bank should consider mainly the legal consideration while declaring dividend and pay cash dividend to fulfill shareholders expectation.
- The bank should pay dividend only after financing in all investment opportunity.
- The correlation of DPS of NABIL with EPS is positive and significant whereas the correlation between DPS with MPS and BVPS and DPR with MPS is insignificant. This means that DPS increase with the increase in EPS, the

correlation of DPS of HBL with EPS shows that MPS is insignificant. Whereas correlation between DPS and BVPS are negative and insignificant. This means that there is no significant relationship of DPS with EPS, MPS, and BVPS of HBL.

Pangeni(2010) conducted research on *Dividend Policy of Commercial Banks in Nepal*. He has taken three sample Banks; Himalayan Bank Ltd., Everest Bank Ltd., and Nepal Investment Bank. Secondary data was used in the study with under mentioned objectives and findings:

Objectives:

- To analyze the existing dividend practices of sample banks in terms of DPS, DPR, and DY.
- To analyze the relationship of dividend with earning per share Net worth per sharemarket value per share of sample commercial banks.
- To find out significance difference between mean of DPS, DPR, and DY of sample Commercial banks.

Findings:

- There is no regularity in DPS of Sample banks in dividend payment.
- Sample banks DPR has not stable.
- The relationship between DPS of all sample banks with EPS is positively correlated. Correlation coefficient between DPS and NWPS two sample banks have positive and HBL has negative. Similarly, the correlation of the DPS with MVPS of the all sample banks is also positively correlated.
- The regression coefficient DPS on EPS of EBL, HBL and NIBL are positive values. Which indicates that DPS is influenced by any factor else than EPS. The coefficient of EBL is high in comparison sample banks. From the regression analysis it can be concluded that a change in EPS affects the DPS differently in different banks.

2.6 Research gap

This study shows the current issue, latest information study on financial indicators, data and real picture of share price of financial institutions. To show latest picture of financial indicators I have covered data of periods from 2005/06 to 2009/10 and collect latest information or changes that occur in these periods. Hence this study fulfills the prevailing research gap about the in depth analysis of the dividend policy which is the major concern of stakeholders. This study focuses on informative to perspective investor of secondary market to analysis different. This study also tries to reveal the major developments and changes in the legal aspects and provisions regarding dividend policy the enactment of Companies act 2063. During the review of previous thesis, it is found that no research has been concluded by taking the sample banks, and it has been selected in this research. So, I believed that this study will full fill thegap, which had been made by the earlier researcher.

CHAPTER – THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is composed of two words: "Research" and "Methodology". The entire process by which we attempt to solve problems through the planned and systematic collection, analysis, interpretation of data is known as research. While "methodology" is the research method used to test the hypothesis. In other words, research methodology is a way to systematically solve the research problem. Research Methodology consists of the methods, steps, guidelines which are to be followed in analysis of a research problem and systematic approach of presenting collected data with meaningful objectives.

3.2 Research Design

The researcher will be required to prepare a design of the research project. Research design is the plan, structure and strategy of investigation conceived so as to obtain objectives of the study. Research design is the plan, structure and strategy of investigation concerned so as to obtain answers to research questions and to control variances.

This study analyzes the dividend of NABIL, EBL and HBL in Nepal and attempts to find out the factors that affects dividend policy. It also tries to find out the relationship between dividend with market price of share, net profit, earning per share and net worth of banks. The research design of this study will be descriptive as well as analytical that uses the variables related with the dividend policy. Necessary data like annual reports, financial statement published by related banks, website and security exchange board of Nepal are collected for analysis. The data are collected from the 2005/06 up to 2009/10.

3.3 Population and Sample

The hundreds of companies that affects share market can't be analyzed due to time and resource limit. So, samples are drawn for the study purpose from the total population (companies). Only three banks are selected under this study. They are as follows:

Himalayan Bank Limited

Everest Bank Limited

NABIL Bank Limited

Everest Bank Limited, Himalayan Bank Limited and NABIL Bank are commercial banks.

3.4 Sources of Data

Mainly the study is conducted on the basis of secondary data. The related data are obtained from the annual reports published by concerned banks. The data of related companies concerned with dividend, stock prices throughout the year are collected from security board of Nepal. Besides this further data are collected from annual reports from published and unpublished journals, economic survey published from Government of Nepal, thesis and different related websites. The other data are obtained from central library, T.U., Shankar Dev Campus, other library, newspaper, journals, magazines etc.

3.5 Method of Analysis

Data collected from various sources have been properly organized, analyzed and presented in appropriate tables and formats for easy and direct understanding. Different financial and statistical tools have been used in this study for analysis. Mainly the analysis will be done by using financial tools, statistical tools, correlation with simple and multiple analyses. EPS, DPS, DPR, Earning Yield, dividend yield, market price per share analysis, market value per share to book value per share ratio and book value per share will be used as financial tools. Similarly mean, standard deviation, coefficient of variation, correlation coefficient of simple and multiple determination, regression, t-statistics and F-test will be used as statistical tools. The

various calculated results obtained through financial and statistical tools are tabulated under different headings and compared and interpreted.

3.6 Financial Indicators Used:

a) Earnings per share (EPS)

EPS refers to the rupee amount earned per share of common share outstanding. It shows the return per share of companies. EPS reflects the earning power of a company. So the higher EPS shows a better achievement and strength. It is calculated by dividing net profit after taxes by number of share outstanding.

$$\text{Eps} = \frac{\text{Net profit after taxes}}{\text{No. of common shares outstanding}}$$

b) Dividend per Share (DPS)

DPS indicates the rupee earning actually distributed to common shareholders per share held by them. It measures the dividend paid to a share from EPS. Only financially strong companies can distribute dividend. DPS indicates that the part of earning distributed to the shareholders on per share basis. High DPS creates positive attitude of shareholder towards the company. It is calculated by dividing the total amount of dividend to equity shareholder by no. of outstanding share.

$$\text{Dps} = \frac{\text{Total EASE (1-b)}}{\text{\#. of outstanding share}} = \frac{\text{total dividend}}{\text{\#. of outstanding share}}$$

Where,

EASE= Earnings available to shareholders equity

= no. of share

b= retention ratio

c) Dividend Payout Ratio (DPR):

DPR is the proportion of earning that is paid in the form of dividend. It reflects the percentage of profits distributed as dividend to shareholders from earnings and that retained in organization. Higher earning enables a company to maximize DPR. There

is inverse relation between dividend and retained earnings. So higher the retained earning lower will be the DPR and vice versa. DPR is calculated as under:

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

d) Earning yield (EY)

Earning yield is the percentage of earning per share to market price per share in the stock market. In other words, it is a financial ratio relating to earning per share to the market price per share at a particular time. It measures the earning in relation to market value of share. It gives some idea how much an investor is earning for his money. The share with higher earning yield is worth buying. It is calculated as;

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

e) Dividend Yield

It reflects relationship between dividend per share and market value per share (MPS). So, it is the dividend received by the investors as a percent of MPS in stock market. The share with higher dividend yield is worth buying. This ratio has high influence on MPS as a small change in DPS can bring significant change in MPS. It is calculated by dividing the cash dividend per share by market value per share i.e.

$$\text{Dividend yield} = \frac{\text{DPS}}{\text{MPS}}$$

f) Market Value (Price) Per Share to Book value per Share (MPS to BVPS) Ratio

This ratio measures that the market situation per share in the competitive open market with respect to book value per share of sample banks. This ratio indicates the price that the market is paying for the share that is reported from the net worth of the banks. This is important to compare the market share prices of different stocks on the basis of the book value per share. It shows the market share price of a stock as a percentage of book value per share and the effect of later on the former. The higher ratios represent to conclude that the better performance of joint venture banks in terms of market price

per share to book value per share. This ratio can be derived by dividing market price per share by book value per share. Thus,

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

g) Net worth per share

It is a rupee value per share. It is calculated by dividing Book Value of Net Worth (or Net worth) by total number of shares outstanding. Thus,

$$\text{Net Worth per Share} = \frac{\text{Net Worth}}{\text{Book value per share}}$$

3.7 Statistical Tools Used:

a) Mean (\bar{X})

The arithmetic or average mean is the sum of total values to the number of observations in the sample divided by the number of observation. Mean value represents the entire data which lies almost between the two extremes. For this reason an average is frequently referred to as a best measure of central tendency. This study is data related to dividend of sample companies over different years.

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

b) Standard deviation (δ)

It was introduced by Karl Pearson in 1823. The standard deviation is the square root of the average of the square of deviation of the observations from the mean. It measures the absolute dispersion i.e. scatterings of the figures. The high amount of dispersion, higher the standard deviation. That means low degree of uniformity of the observation. In this study, standard deviation is calculated for selected dependent and independent variables specified in the models presented above.

$$\delta = \sqrt{\frac{\sum(x-\bar{x})^2}{n}}$$

Where,

X=variable

\bar{x} = mean

n =number of observation

c) Coefficient of Variation (C.V)

The coefficient of variation reflects the relationship between mean and standard deviation. The relative measure of dispersion comparable across which is defined as the ratio of σ to mean expressed in percentage. In other words the distribution with lower C.V. is said to be more consistent or more uniform whereas the distribution with higher C.V. is indicative of less consistent or less uniform. Symbolically;

$$cv = \frac{(s.d * 100)}{mean}$$

Where,

S.d= standard deviation

d) Correlation Coefficient (r)

It is the statistical tools that we can used to describe the degree to which one variable is linearly related to another. The Karl Pearson's coefficient of correlation measures the degree of relationship between two sets of the figures. It gives the magnitude and direction of two set of figures. It shows the extent to which a variable leads another. In this study simple coefficient of correlation is used to determine the relationship of different variables and dividend.

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

Interpretation of Correlation Coefficient

Degree	Direction	
	Positive	Negative

Perfect	+1	-1
Significant(very High)	+0.75 to +1	-0.75 to -1
High	+0.50 to +0.75	-0.50 to -0.75
Low	+0.25 to +0.50	-0.25 to -0.50
Insignificant(Very Low)	0 to +0.25	0 to -0.25

The data related to dividend over different years are tabulated and their relationships with each others are drawn out. The value of correlation can range from -1(perfect negative relation) to 1(perfect positive relation). $r=0$ implies no relation between the two variables.

Thus, in this study, the degree of relationship between market price and other relevant financial indicators such as dividend per share, earning per share, dividend payout ratio etc is measured by the correlation coefficient.

e) Probable error (P.E.) :

For testing the significance of the calculated coefficient of correlation, probable error (P.E) is computed as under:

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

Where,

r = coefficient of correlation

P.E = probable error

r^2 = coefficient of determination

n = No. of Observation

Decision of significance is made as under

If $r < P.E.$ ----insignificant

If $r > 6 * P.E.$ ----significant

If $P.E. < r < 6 P.E.$ ----undefined

The upper and lower limit within the correlation coefficient is expected to lie are given by:-

$r + P.E.$ (upper limit)

$r - P.E.$ (lower limit)

f) Coefficient of Determination (r^2)

The coefficient of determination is a measure of the degree (extent or strength) of linear association or correlation between two variables, one of which happens to be independent and other being dependent variable(s). In other words r^2 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 r^2 is equal to 0.85, which indicates that the independent variables used in regression model explain 85% of the total variation in the dependent variable. A value of one can occur only if regression is unexplained and there is no variation, variation is zero which simply means that all the data points in the scatter diagram fall exactly on the regression line. In this study, r^2 is calculated as for the model prescribed above.

$$r^2 = \frac{\textit{explained variance}}{\textit{total variance}}$$

g) Regression analysis:

The concept of regression was first introduced by Francis Galton. Regression refers to an analysis that involves fitting a linear equation between different sets of data using various methods like least square, etc. In other words, it is a statistical method of determining relationship between different set of variables, establishing a functional equation that helps predicting one, given the other variable(s). It is considered as a useful tool for determining the strength of relationship between two (simple regression) or more (multiple regression) variables.

Simple regression

The analysis that relates two variables is known as simple regression analysis. Here following relation between two variables is established:

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

Where

a = regression constant

b = regression coeff.

X (independent variable) and Y (dependent variable) are two variables that are being analyzed. Here they are defined separately while relating various variables as under:

1. Dividend per share on earning per share

$$Y=DPS$$

$$X=EPS$$

This model relates DPS and EPS. It enables to know whether EPS is the influencing factor for determining DPS or not.

2. Market Price per Share (MPS) on DPS

$$Y=MPS$$

$$X=DPS$$

This model relates market price and DPS

Multiple regressions

Heretwo or more independent variables are used to estimate the value of dependent one. It is simply the extension of simple regression. The regression line takes the following form:

$$X_1=a_1+b_1X_2+b_2X_3$$

For example while adjusting a relation of MPS on EPS and DPS, we have

$$X_1=MPS$$

a_1 =regression constant

b_1 =regression coefficient of variable 1

b_2 =regression coefficient of variable 2

$$X_2=DPS$$

$$X_3=EPS$$

It helps to predict the MPS on the basis of EPS and DPS.

Regression Constant (a)

The value of constant is the intercept of model that indicates the average level of dependent variable when independent variable is zero. Also, 'a' (constant) indicates the mean or average effect on dependent variable of all variables committed from the model. Regression constant is calculated for selected dependent and independent variables specified in this study.

Regression Coefficient (b, b₁, b₂, b₃.....)

The regression coefficient of each independent variable indicates the marginal relationship between that variable and value of dependent variable, holding the effect

of all other independent variables constant in the regression model. It explains how changes in independent variables affect the value of dependent variables estimate.

h) Standard Error of Estimate (SEE)

It measures the dispersion about an average line for measurement of accuracy in estimated line. It is impossible to perfectly predict only with help of regression equation. Therefore standard error of estimate is calculated to measure the accuracy of prediction. Smaller the SEE, more accurate is the estimate and vice versa. If standard error of estimate is zero, then there is no variation about the line and the correlation will be perfect. Thus, with the help of SEE, it makes possible for us to ascertain how good and representative the regression line is as a description of the average relationship two series.

i) Test of Hypothesis

Hypothesis is usually considered as the principle instruments in research. It can also be considered as suggested solution of the research problems. Its main function is to suggest new experiments and observations. With the available data decision makers applied the hypothesis testing and give the decision accordingly. It may not be proved absolutely but in practice it is accepted if it has survive critical testing. Usually the Statistical hypothesis is tested at 1%, 5% and 10% level of significance.

Quantities statement about the population parameter is called a hypothesis. In other words, it is an assumption that is made about the found valid of verification. The act of verification involves testing validity of such assumption which when undertaken on the basis of sample evidence is called statistical hypothesis or testing of hypothesis. By testing the hypothesis we can find out whether it qualifies the acceptance or rejection the hypothesis. The acceptance the hypothesis means there is no any sufficient evidence provided by sample to reject it and does not necessarily imply that is true. The main goal of testing of hypothesis is to test the characteristics of the hypothesized population parameter and sample statistics is significant or not.

Generally, two complementary hypotheses are set up simultaneously. If one of the hypotheses is accepted other is rejected. The two hypotheses that are set up in the

testing of hypothesis are null hypothesis and alternative hypothesis. In this study, F-test is done to find out the uniformity of DPS , DPR and DY due to the more than two samples. The hypothesis tests of this research work are:

First Hypothesis

Null hypothesis (H_0):

There is no significant difference in DPS on sample Commercial banks.

Alternatives Hypothesis (H_1):

There is significant difference in DPS on sample commercial banks.

Second Hypothesis

Null hypothesis (H_0)

There is no significant difference in DPR on sample commercial banks.

Alternatives Hypothesis (H_1)

There is significant difference in DPR on sample commercial banks.

Third Hypothesis

Null hypothesis (H_0)

There is no significant difference in DY on sample commercial banks.

Alternatives Hypothesis (H_1)

There is significant difference in DY on sample commercial banks.

j)'t' Statistics

To test the validity of assumption, if sample size is less than 30, then 't' test is used for applying t-test in the context of small sample. The 't' value is calculated first and compared with the table of 't' at a certain level of significance for given degree of freedom. If the calculated value of 't' table value in certain level of significance, given the degree of freedom then the assumptions are significant. But if 't' value is less than the concerning table value of 't', the difference is not treated as significant.

k) Microsoft Excel

Microsoft Excel is a data processing program. The data in this study are processed in this program. This program is also useful to calculate descriptive statistical and to produce necessary charts and diagrams. The mean, standard deviation, coefficient of variation and other necessary calculation and charts are prepared with the use of Microsoft Excel.

CHAPTER - FOUR

PRESENTATION AND ANALYSIS OF DATA

The basic objectives of the study have already mentioned in the 'Introduction Chapter'. In order to achieve this objective, several analytical tools & techniques are employed which are clearly described in third chapter, 'Research Methodology'. This chapter consist presentation, analysis and interpretation of secondary data related with different variables using both financial and statistical tools explained in previous chapter. This chapter is primary part of the study.

This analysis on dividend policy of joint venture banks begins with analysis of dividend per share, earning per share, earnings yield ratio, dividend payout ratio, dividend yield ratio, market price per share and market value per share to book value per share analysis. These financial indicators of concerned banks are compared with the help of statistical tools viz. mean, standard deviation, coefficient of variation which are calculated and interpreted. At last, correlation, regression analysis and hypothesis of some specific components have been made.

4.1 Analysis of Financial Indicators and Variables

To get the Knowledge of a business, financial tools are used which is fruitful to explore the strengths and weakness of the financial policies and strategies of a company. These tools are used for the analysis and interpretation of financial data. Financial tools are those which help to study the financial position of the firms. They give management an indication of what investors think of the company's past performance and future prospects. They help in evaluating a firm's performance and provide guidelines for analyzing the ways of improving performance of the firm. They are important aspect for the financial analysis of any firm.

4.1.1 Analysis of Dividend per Share (DPS)

DPS is the amount of dividend that a stockholder will receive for each share of stock held. It can be calculated by taking the total amount of dividends paid and dividing it

by the total shares outstanding. The following table shows the DPS paid by the banks and their average through the year 2005/06 to 2009/10. DPS is calculated using the following formula.

$$\text{Dps} = \frac{\text{total dividend}}{\text{number of outstanding share}}$$

For calculation of mean, standard deviation and coefficient of variation of other tables in succeeding sections, also refer to sample calculation in appendix-1

Table 4.1
DPS of various banks in different years

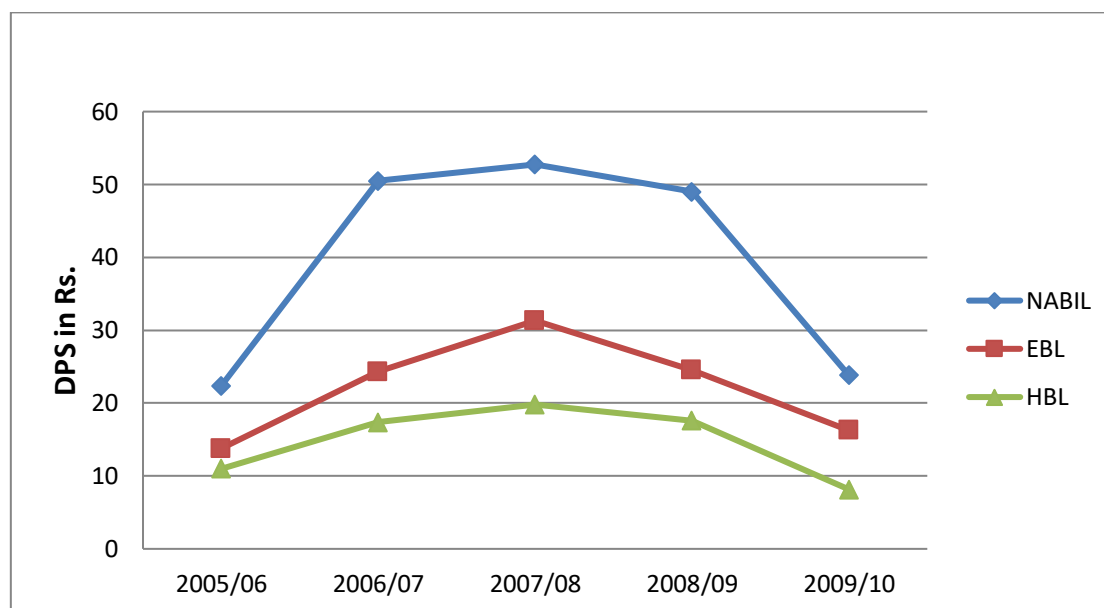
Year	NABIL	EBL	HBL
2005/06	85	25	30
2006/07	100	10	15
2007/08	60	20	25
2008/09	35	30	12
2009/10	30	30	11.84
Total	310	115	93.84
Mean	62.00	23.00	18.77
S.D.	27.31	7.48	7.39
C.V.(%)	44.05	32.54	39.37

Source: Annual Report 2009/10 of HBL, NABIL and Everest Bank Ltd. and Appendix – I

The above table shows that dividend per share from fiscal year 2005/06 to 2009/10. In an average the highest dividend among these three banks is NABIL bank i.e. Rs.62 comparing with the average dividend of the Everest Bank (Rs.23) and Himalayan Bank (Rs.18.77). From above table of analysis we can conclude that NABIL Bank's dividend per share is better comparatively. The standard deviation of NABIL, EBL & HBL is 27.31, 7.48 and 7.39 respectively and C.V. is 44.05, 32.54 and 39.37 respectively. In above analysis NABIL Bank's C.V. is more fluctuate than other Dividend.

Figure 4.1

Movement of DPS in different years



4.1.2 Analysis of Earning Per Share (EPS)

EPS measures the profit available to the equity shareholders on per share basis, i.e. the amount that they can get on each share held. Earnings per share shows the company's capability of generating profit per share. Higher EPS indicates better performance of the companies and company with net Loss will result negative EPS. It can be calculated by taking the total earnings dividing it by the number of share outstanding. The following table presents a clear view about the earnings made by the three banks in different period from Fiscal Year 2005/06 to 2009/10 EPS is calculated as;

$$\text{Eps} = \frac{\text{Net profit after taxes}}{\text{No. of common shares outstanding}}$$

Table 4.2
EPS of the Banks in Different Years

Year	NABIL	EBL	HBL
2005/06	129.21	62.78	59.29
2006/07	137.08	78.42	60.66
2007/08	108.31	91.82	62.74

2008/09	106.76	99.99	61.9
2009/10	78.61	100.16	31.8
Total	559.97	433.17	276.39
Mean	111.99	86.63	55.28
S.D.	20.40	14.32	11.80
C.V.(%)	18.22	16.52	21.34

Source: Annual Report 2009/10 of HBL and NABIL and Everest Bank Ltd and Appendix - I

Above table 4.2 shows the situation of Earning per Share of NABIL, Everest Bank and Himalayan Bank Ltd. The performances and the achievement of business organization are measured in terms of its capital to general earnings, higher earning shows higher strength while lower earning shows weaker strength of banks.

The average EPS of NABIL Bank is Rs.111.99 which is higher compared to EPS of Everest Bank (Rs.86.63) and Himalayan Bank Ltd (Rs.55.28).

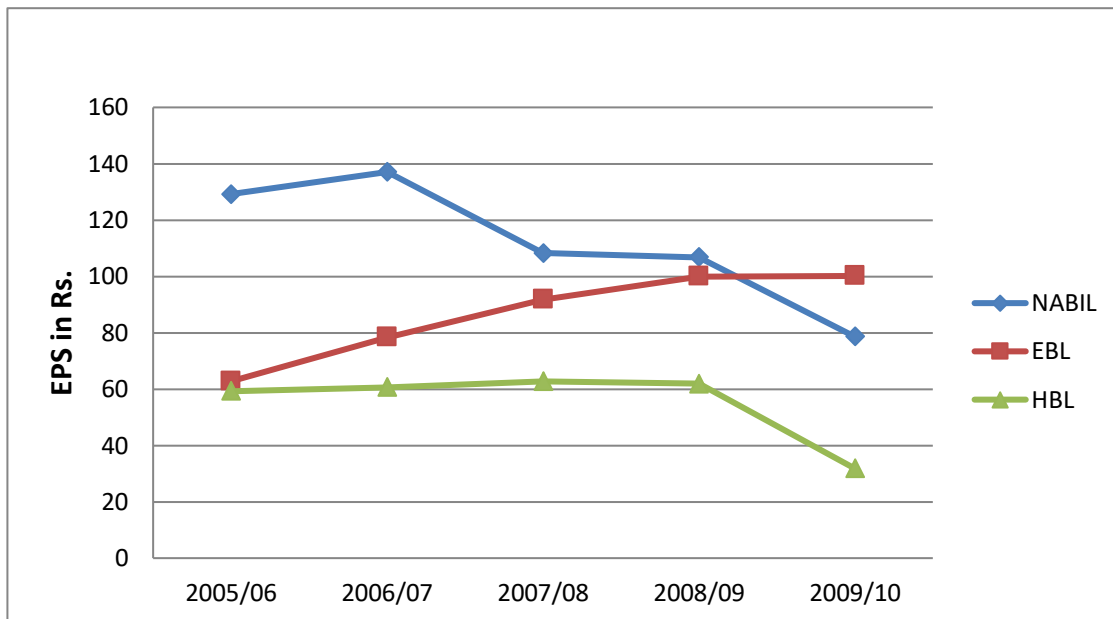
The EPS of NABIL Bank ranges between Rs.78.61 to Rs.137.08. It followed a increasing trend till the year 2006/07 and from the year 2007/08, EPS is decreasing yearly. Overall the trend is increasing for the first half and it is decreasing for the second half. The EPS of the bank deviates by Rs.20.40 and the coefficient of variation is 18.22%.

The EPS of EBL ranges between Rs.62.78 to Rs.100.16. EPS of this bank is increasing yearly. The situation of the bank shows better during these years. The EPS deviates by Rs.14.32 and coefficient of variation is 16.52%.

Similarly, in the case of Himalayan Bank the EPS deviates by Rs.11.80. The EPS of HBL ranges between Rs. 31.8 to Rs. 62.74. It followed an increasing trend till the year 2007/08 and catches the decreasing trend. It has decreased from Rs. 61.9 (2008/09) to Rs. 31.8 (2009/10).

Comparing the EPS of the sample banks, NABIL Bank has a higher rate of fluctuation of 18.22% which means that the EPS of this bank is less consistent than EBL and HBL.

Figure 4.2
Movement of EPS in different years



4.1.3 Analysis of Dividend Pay Out Ratio (DPR)

Dividend payout ratio is the proportion of earning paid in the form of dividend it shows what percentage is retained as reserve and surplus for the growth of the companies. It is calculated by dividing DPS by EPS. The following table shows the DPR of the NABIL Bank, Everest Bank and Himalayan Bank Ltd.

DPR can be calculated by using following formula.

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

Different Categories of D/P ratios are as follows.

<u>Policy</u>	<u>DPR</u>
<input type="checkbox"/> Conservative	Less than 20%
<input type="checkbox"/> Moderate	20% to 50%
<input type="checkbox"/> Aggressive	more than 50%

Table 4.3
DPR of the Banks in Different Years

Year	NABIL	EBL	HBL
2005/06	65.78	39.82	50.6
2006/07	72.95	12.75	24.73
2007/08	55.4	21.78	39.85
2008/09	32.78	30	19.39
2009/10	38.16	29.95	37.23
Total	265.07	134.3	171.8
Mean	53.01	26.86	34.36
S.D.	15.47	9.08	11.13
C.V.(%)	29.18	33.81	32.38

Source: Annual Report 2009/10 of HBL and NABIL and Everest Bank Ltd and Appendix – I

The above table 4.3 shows the dividend payout ratios of three sample banks. The table helps to find out the percentage of dividend payout of the total earning made by every bank for every year.

In this table, the comparative study DPR of NABIL Bank, Everest Bank and Himalayan Bank Ltd. for 2005/06 to 2009/10 with their Mean, Standard deviation and coefficient of variation. In the year 2005/06 NABIL Bank (65.78%) and Himalayan Bank (50.60%) followed Aggressive policy at the same time Everest Bank Ltd. followed moderate policy with D/P ratio 39.82%.

In 2006/07 NABIL Bank (72.95%) has followed Aggressive policy, Himalayan Bank (24.73%) has followed moderate policy and Everest Bank (12.75%) followed conservative policy. These shows NABIL have highest D/P Ratio among three banks. It shows that NABIL bank's dividend paying policy is good and it has very good condition among three banks.

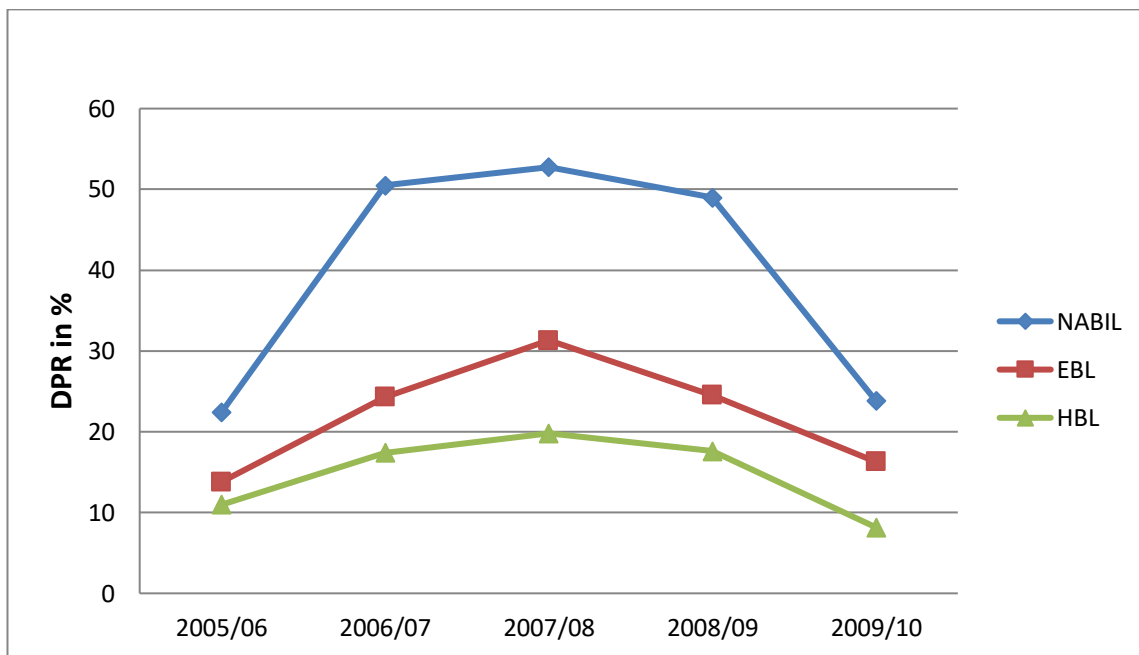
In 2007/08 NABIL has followed again aggressive dividend policy which DPR is 55.40%. The Dividend Payout Ratio of EBL and HBL have 21.78% and 39.85% respectively which shows moderate policy.

In 2008/09, NABIL Bank and Everest bank have Moderate dividend policy with DP ratio 32.78% and 30% respectively & HBL with 19.39% DPR shows conservative dividend policy.

In 2009/10, NABIL Bank has 91.17% DPR which shows better condition following aggressive dividend policy. EBL and HBL have moderate dividend policy with DPR 29.95% and 37.23% respectively.

Finally, the standard deviations of NABIL, EBL and HBL are 19.34, 9.08 and 11.13 respectively and the coefficient of variation of NABIL 30.39%, EBL is 33.80% and HBL is 32.38%.

Figure 4.3
Movement of DPR in different years



4.1.4 Analysis of Earning Yield Ratio (EY)

It measures the earning in relation to market value of share. It gives some idea of how much an investor might get for his money. The share with higher earnings yield is worth buying. Earning yield is informative to compare the market share prices of stocks in the secondary market. The Earning Yield Ratio (EY) of NABIL, EBL and HBL is presented in the following Figure 4.5. Earning Yield Ratio can be calculated as follows;

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

The relationship between earning per share and market price per share of three banks in different years are exhibited in the table below. The main reason behind such kind of tabulation is to point the percentage relationship between EPS and MPS so as to illustrate the earning yield of the concerned banks, which may be a reliable tool to calculate the real value of the dividend as compared with the current market value of each share.

Table 4.4
E/Y Ratio of the Banks in Different Years

Year	NABIL	EBL	HBL
2005/06	5.76	4.55	5.39
2006/07	2.71	3.23	3.49
2007/08	2.05	2.93	3.17
2008/09	2.18	4.07	3.52
2009/10	3.3	6.14	3.9
Total	16	20.92	19.47
Mean	3.20	4.18	3.89
S.D.	1.35	1.14	0.78
C.V.(%)	42.31	27.16	20.11

Source: Annual Report 2009/10 of HBL, NABIL and Everest Bank Ltd and Appendix – I

The table 4.5 depicts that the earning yield ratio of NABIL is in decreasing trend till year 2007/08 and follow an increasing trend. The earning yield decreases from 5.76% in the fiscal year 2005/06 to 2.05% in the fiscal year 2007/08 and again increases from 2.18% in the FY 2008/09 to 3.30% in the FY 2009/10. The standard deviation is 1.35 and the coefficient of variation is 42.31%. The coefficient of variation indicates that there is 42.31% fluctuation in the EY of NABIL. Similarly, the average EY of NABIL indicates that only 3.20% of MPS is converted to EPS in the five year period. Although the EPS of NABIL followed increasing trend, the EY ratio indicates that the proportionate increase in EPS is lower than the proportionate increase in MPS, which means that the investor is paying more in the market to gain one rupee earning in each fiscal year.

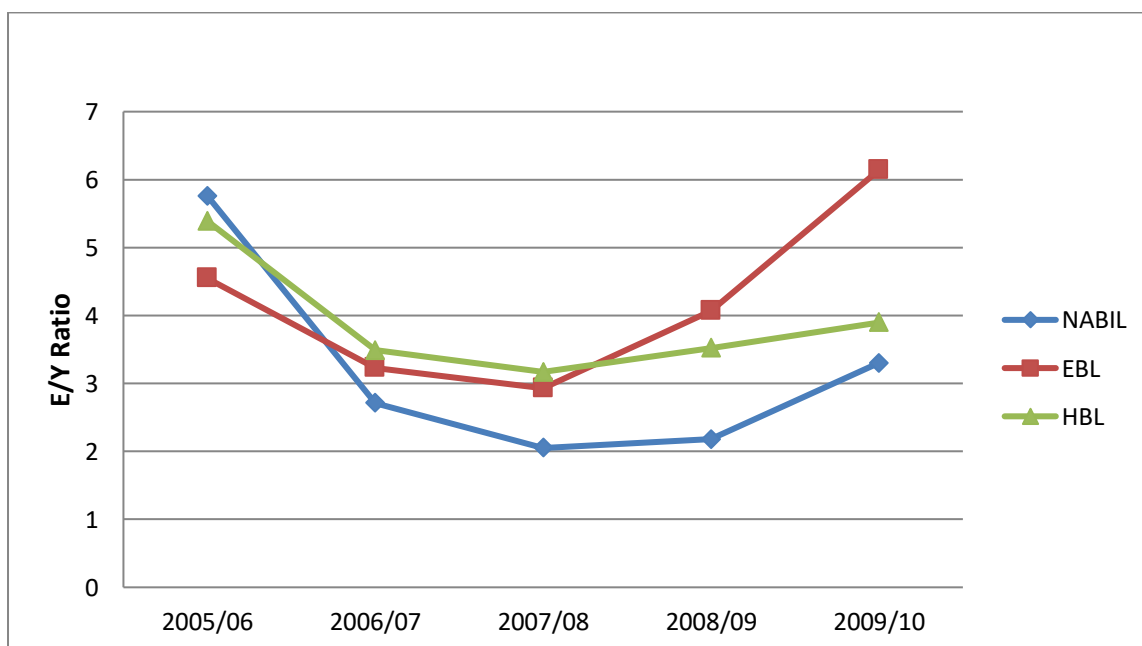
The Earning Yield Ratio of EBL also followed decreasing trend till FY 2007/08 and

start increasing. The earning yield decreases from 4.55% in the fiscal year 2005/06 to 2.93% in the fiscal year 2007/08 and again increases from 4.07% in the FY 2008/09 to 6.14% in the FY 2009/10. The standard deviation is 1.14 and the coefficient of variation is 27.16%. The C.V. indicates that there is 27.16% fluctuation in the EY of EBL. Similarly, the average EY of EBL indicates that only 4.18% of MPS is converted to EPS in the five year period.

Similarly, The Earning Yield Ratio of HBL also followed decreasing trend till FY 2007/08 and start increasing. The earning yield decreases from 5.39% in the fiscal year 2005/06 to 3.17% in the fiscal year 2007/08 and again increases from 3.52% in the FY 2008/09 to 3.9% in the FY 2009/10. The average earning yield ratio is 3.89%, standard deviation is 0.78 and coefficient of variation is 20.11%. The average EY implies that EPS of HBL represents only 3.89% of MPS in the five year period.

Comparing the average E/Y ratio of NABIL (3.20%), EBL (4.18%) and HBL (3.89%), it can be considered that EBL is more efficient in earning than that of NABIL bank and Himalayan Bank Ltd. on the basis of market price of share.

Figure 4.4
Movement of E/Y Ratio in different years



4.1.5 Analysis of Dividend Yield Ratio (DY)

Dividend yield is a % of DPS on MPS. It shows that how much is the DPS on MPS. The Dividend yield ratio of NABIL, EBL and HBL during the five year period is presented in the following Table 4.6. D/Y Ratio is calculated by;

$$\text{Dividend yield} = \frac{\text{DPS}}{\text{MPS}}$$

Table 4.5

D/Y Ratio of the Banks in Different Years

Year	NABIL	EBL	HBL
2005/06	3.79	1.81	2.73
2006/07	1.98	0.41	0.86
2007/08	1.14	0.64	1.26
2008/09	0.71	1.22	0.68
2009/10	1.26	1.84	1.45
Total	8.88	5.92	6.98
Mean	1.78	1.18	1.40
S.D.	1.09	0.59	0.72
C.V.(%)	61.19	49.52	51.66

Source: Annual Report 2009/10 of HBL and NABIL and Everest Bank Ltd and Appendix – I

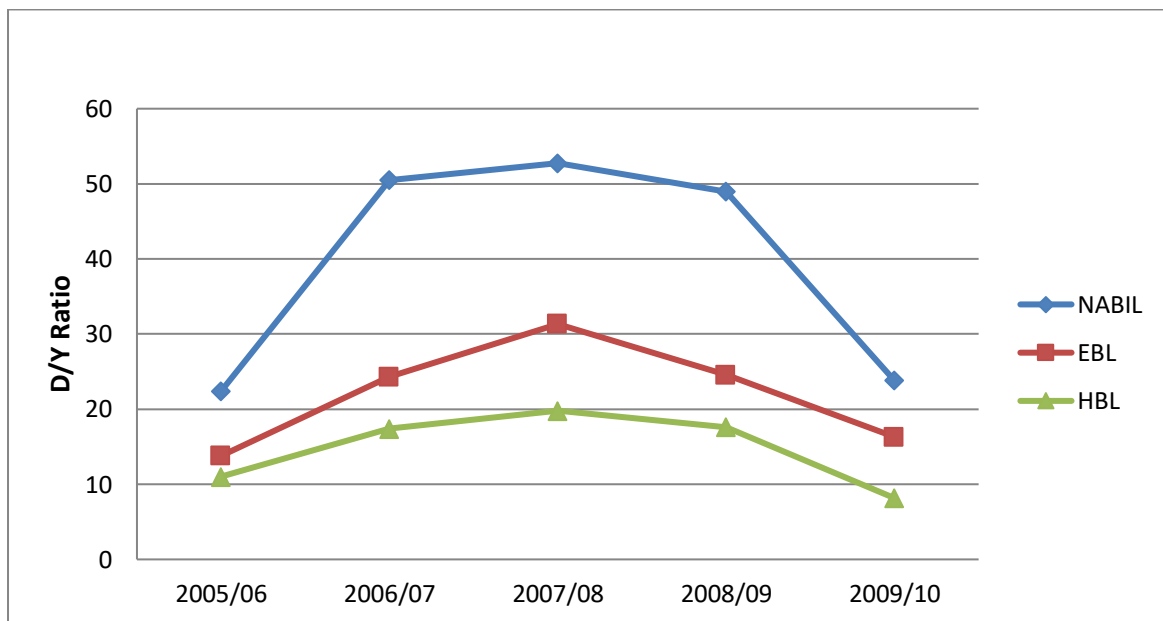
The above table depicts that the dividend yield ratio of NABIL ranged from 0.71% in the fiscal year 2008/09 to 3.79% in the fiscal year 2005/06. The dividend yield ratio followed decreasing trend till 2008/09 and increase in FY 2009/10. The average dividend yield of NABIL during the five year period is 1.78% and the standard deviation & C.V. are 1.09 and 61.19% respectively. The average dividend yield of NABIL indicates that the shareholders are paid dividend of only 1.09% of the market price, they invested per share.

The dividend yield of EBL ranged from 0.41% in the fiscal year 2006/07 to 1.84% in the fiscal year 2009/10. The dividend yield ratio followed decreasing trend till

2006/07 and follows increasing trend. The average dividend yield of EBL during the five year period is 1.18% and the standard deviation & C.V. are 0.59 and 49.52% respectively. Overall EBL followed increasing trend.

Similarly, HBL followed fluctuating trend. The DY ranged from 0.68% in the fiscal year 2008/09 to 2.73% in the fiscal year 2005/06. HBL maintained an average dividend yield of 1.40%, which indicated that the shareholder of HBL got Rs.1.40 dividend for Rs.100 investment per share in the market. Likewise, standard deviation and C.V. of DY in HBL are 0.72 and 51.66% respectively. Comparing the average dividend of NABIL(2.13%), EBL (1.18%) and HBL (1.40%), it can be considered that the shareholders of NABIL got more percentage of the market price they paid for a share as dividend in return.

Figure 4.5
Movement of D/Y Ratio in different years



4.1.6 Analysis of Market Price per Share (MPS)

The table given below draws a clear picture of the share price from fiscal year 2005/06 to 2009/10. It is calculated as follows:

$$P_0 = \frac{D_1}{(K_s - g)}$$

Where,

P_0 = Current market price per share

D_1 = Expected dividend per share at the end of the year

g = Dividend growth rate

K_s = Investor's required rate of return

Table 4.6
MPS of the banks in different years

Year	NABIL	EBL	HBL
2005/06	2240	1379	1100
2006/07	5050	2430	1740
2007/08	5275	3132	1980
2008/09	4899	2455	1760
2009/10	2384	1630	816
Total	19848	11026	7396
Mean	3969.6	2205.2	1479.2
S.D.	1359.47	630.14	443.01
C.V.(%)	34.25	28.57	29.95

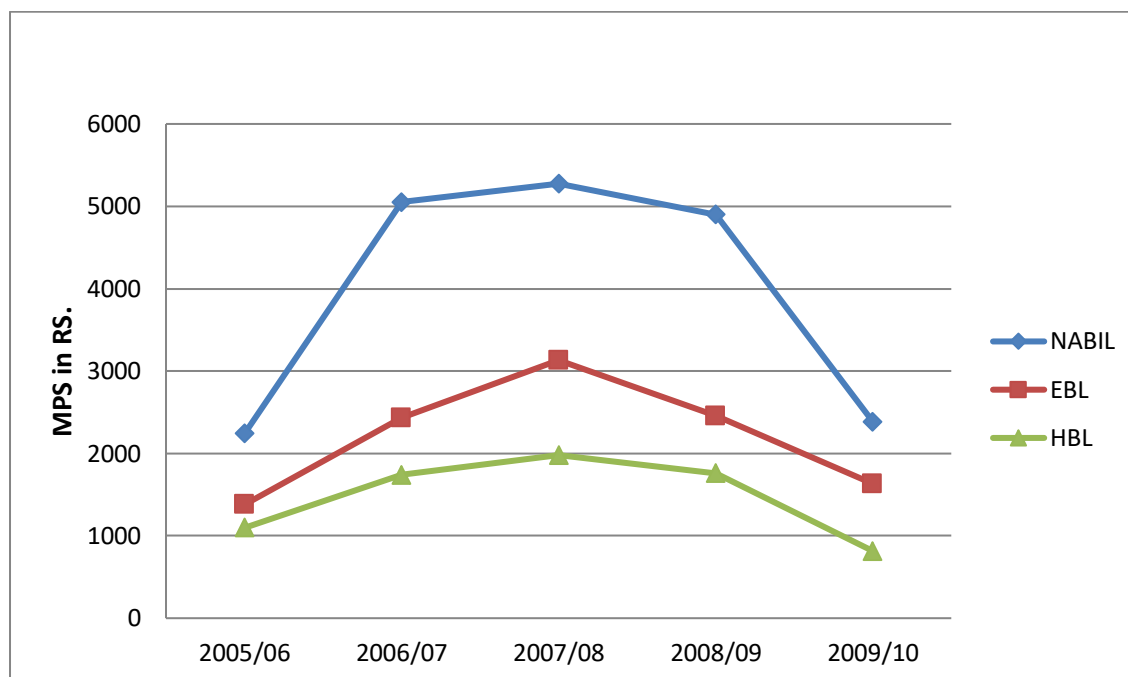
Source: Annual Report 2009/10 of NABIL, EBL and HBL and Appendix-I

The MPS of NABIL is maximum at Rs.5275 and minimum at Rs.2240. For the first three year the MPS has taken an increasing trend and then started decreasing. Overall it has adopted an increasing trend.

The MPS of EBL is maximum at Rs3132 and minimum at Rs. 1379. The MPS of EBL followed an increasing trend till the year 2007/08. The MPS declined the following years.

Comparing three banks in terms of MPS, NABIL has a higher average. But it has a higher standard deviation and coefficient of variation, which means that deviation of MPS of this bank, is more and also it has higher fluctuation.

Figure 4.6
Movement of MPS in different years



4.1.7 Market Value per Share (MPS) to Book value per Share (BVPS) Ratio

This ratio indicates the price that the market is paying for the share that is reported from the net worth of the banks. The market price per share to book value per share of both banks is presented in the following Table 4.8. It can be calculated as follows;

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

Table 4.7

MPS to BVPS Ratio of the Banks in Different Years

Fiscal Year	NABIL			EBL			HBL		
	MPS	BVPS	Ratio	MPS	BVPS	Ratio	MPS	BVPS	Ratio
2005/06	2240	381	5.88	1379	217.67	6.34	1100	228.72	4.81
2006/07	5050	418	12.08	2340	292.75	7.99	1740	264.74	6.57

2007/08	5275	354	14.90	3132	321.78	9.73	1980	247.95	7.99
2008/09	4899	324	15.12	2455	345.23	7.11	1760	256.52	6.86
2009/10	2384	265	9.00	1630	331.99	4.91	816	226.79	3.60
Total			56.98			36.08			29.83
Average			11.40			7.22			5.97
S.D.			3.54			1.62			1.56
C.V.(%)			31.10			22.38			26.18

Source: Annual Report 2009/10 of HBL and NABIL and Everest Bank Ltd and Appendix - I

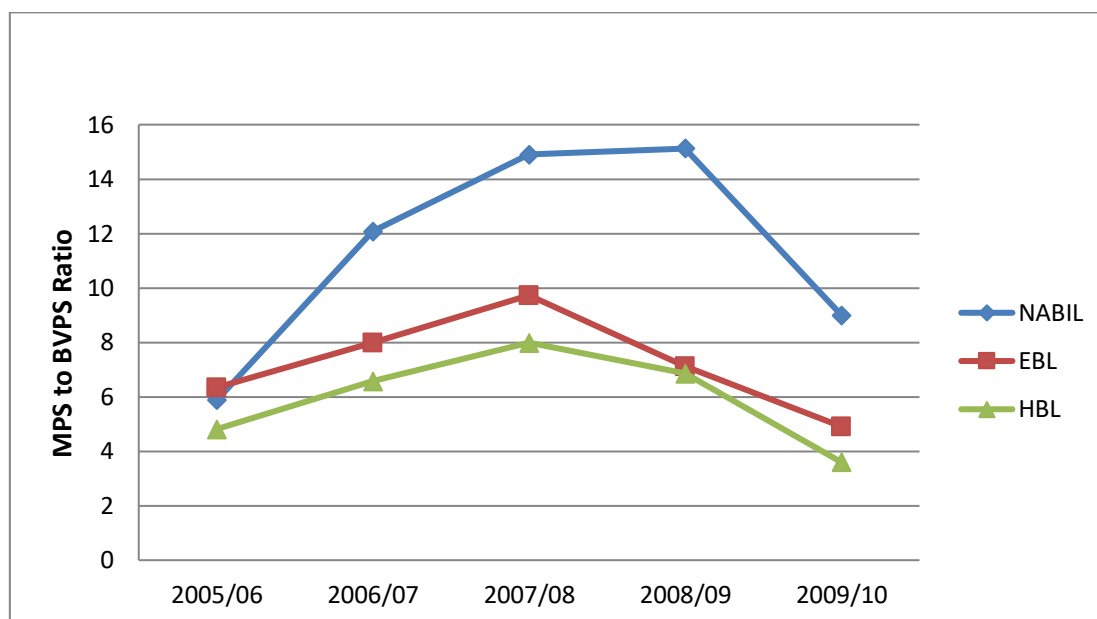
The table 4.7 shows that the ratio of market value per share (MPS) to book value per share (BVPS) of NABIL is in ascending order till 2008/09 and decreased in FY 2009/10. The ratio increased from 5.88 times in the fiscal year 2005/06 to 15.12 times in the fiscal year 2008/09. It means that the investor paid Rs. 5.88 in the market for Re. 1 book value of the share in the fiscal year 2005/06 and Rs. 15.12 in the market for Re.1 book value of the share 2008/09. The average MPS to BVPS in the five year period is 11.40 times, standard deviation is 3.54 and C.V. is 31.10%. In average, investor paid 11.40 times of the book value per share in the market to possess a single share.

Likewise, the market price per share to book net worth per share of EBL increased in each fiscal year till 2007/08 and then started decreasing from FY 2008/09 to FY 2009/10. The ratio ranged from 6.34 times to 9.73 times in the fiscal year 2005/06 and 2007/08 respectively. The average ratio of EBL is 7.22 times, Standard deviation is 1.62 and coefficient of variation is 22.38 percent. In the five year period, the shareholders paid 7.22times more than the book value per share to acquire a single share in market value in an average.

Similarly, the market price per share to book value per share of HBL increased till FY 2007/08 and stepped downward. The ratio ranged from 3.60 times to 7.99 times in the fiscal year 2005/06 and 2009/10 respectively. The average ratio of HBL is 5.97 times, Standard deviation is 1.56 and coefficient of variation is 26.18 percent. In the five year period, the shareholders paid 5.97 times more than the book value per share to acquire a single share in market value.

Figure 4.7

Movement of MPS to BVPS Ratio



4.1.8 Analysis of Net worth per share

It is a rupee value per share. It is calculated by dividing Book Value of Net Worth (or Net worth) by total number of shares outstanding. Thus,

$$\text{Net Worth per Share} = \frac{\text{Net Worth}}{\text{Book value per share}}$$

Table 4.8

Movement of Net worth per share in different years

Fiscal Year	NABIL	EBL	HBL
2005/06	381	217.67	228.72
2006/07	418	292.75	264.74
2007/08	354	321.78	247.95
2008/09	324	345.23	256.52
2009/10	265	331.99	226.79
Total	1742.00	1509.42	1224.72
Average	348.40	301.88	244.94
S.D.	51.94	45.51	15.02
C.V.(%)	14.91	15.08	6.13

Source: Annual Report 2009/10 of HBL and NABIL and Everest Bank Ltd and Appendix - I

The Net worth per share of NABIL is maximum Rs. 418 and minimum at Rs. 265. For the first two years the Net worth per share has taken an increasing trend and then started decreasing. Overall it has adopted a decreasing trend.

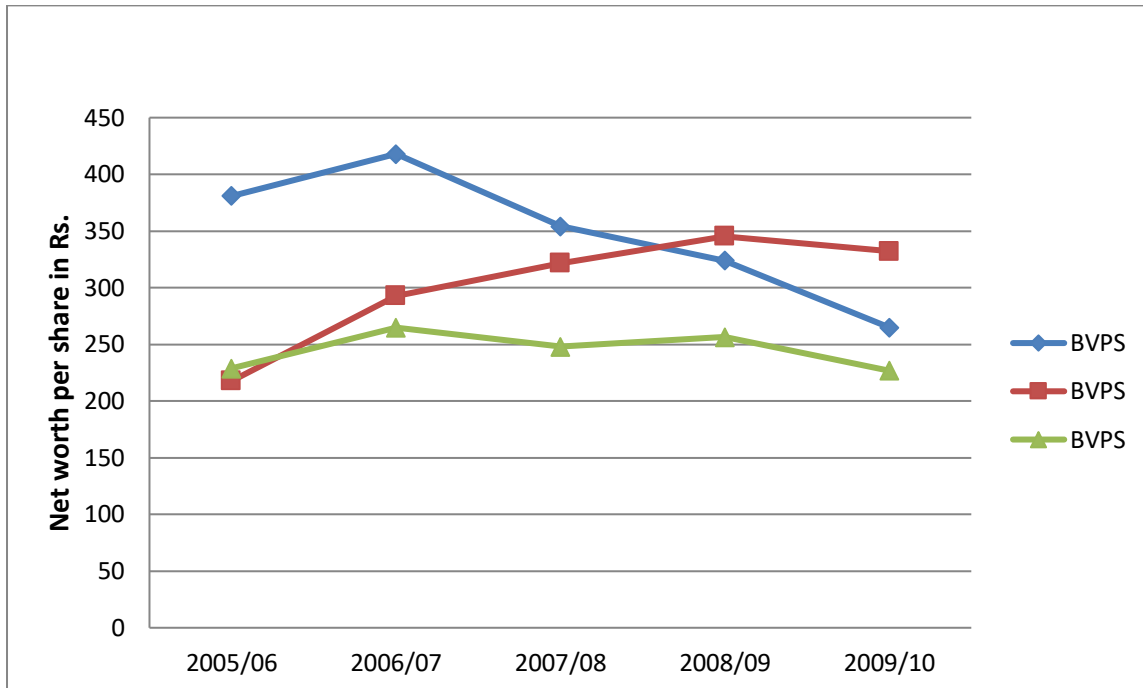
The Net worth per share of EBL is maximum Rs.345.23 and minimum Rs.226.79. The Net worth per share of EBL followed an increasing trend till the year 2008/09. Overall it has adopted an increasing trend.

Similarly, the Net worth per share of HBL is maximum Rs. 264.74 and minimum Rs.226.79. Overall it has taken a decreasing trend.

Comparing three banks in terms of Net worth per share, NABIL has a higher average. EBL has a higher standard deviation and coefficient of variation, which means that deviation of Net worth per share of this bank, is more and also it has higher fluctuation.

Figure 4.8

Movement of Net worth per share in different years



4.2 Correlation Analysis

Financially tools are not sufficient to analyze the relationship among the various variables; therefore statistical tools are used to analyze the variable more effectively. For this purpose some financial data are used to determine how one variable will affect another variable. Correlation is statistical tools which are used to determine covariance between two or more variables and to measure how a change in one variable affects the other variables. In this study following relationship has been shown,

4.2.1 Correlation between DPS and EPS

4.2.2 Correlation between EPS and MPS

4.2.3 Correlation between DPS and MPS

4.2.1 Correlation between DPS and EPS

Earnings per share are one of the influential factors for dividend policy. So correlation between earning per share and dividend per share is explained as follows;

Karl Pearson's Coefficient of Correlation (r) between EPS and DPS of NABIL Bank Ltd.

Year	EPS(X)	DPS(Y)	X ²	Y ²	XY
2005/06	129.21	85	16695.22	7225.00	10982.85
2006/07	137.08	100	18790.93	10000.00	13708.00
2007/08	108.31	60	11731.06	3600.00	6498.60
2008/09	106.76	35	11397.70	1225.00	3736.60
2009/10	78.61	30	6179.53	900.00	2358.30
Total	ΣX=559.97	ΣY= 310	ΣX²=64794.44	ΣY²=22950	ΣXY=37284.35

We have,

$$\begin{aligned}
 r &= \frac{n\sum XY - \sum X \sum Y}{\sqrt{(n\sum X^2 - (\sum X)^2)}\sqrt{n\sum Y^2 - (\sum Y)^2}} \\
 &= \frac{5 * 37284.35 - 559.97 * 310}{\sqrt{(5 * 64794.44 - (559.97)^2)}\sqrt{5 * 22950 - (310)^2}} \\
 &= \frac{12831.05}{\sqrt{10405.78} * \sqrt{18650}} \\
 &= 0.9211
 \end{aligned}$$

This shows that there exists positive correlation between the two variables.

Computation of Probable error (P.E.),

$$\begin{aligned}
 \text{P.E.} &= \frac{1-r^2}{\sqrt{n}} * 0.6745 \\
 &= \frac{1-0.9211^2}{\sqrt{5}} * 0.6745 \\
 &= 0.0457
 \end{aligned}$$

$$6\text{P.E.} = 6 * 0.0457 = 0.2742$$

If $r > 6 \text{ P.E.}$ it is indicative of statistically significant correlation.

If $r < 6 \text{ P.E.}$ it is indicative of statistically insignificant correlation.

But, in case of NABIL, $r > \text{P.E.}$ i.e. $0.9211 > 0.2742$. This implies that there is significant correlation between EPS and DPS of NABIL.

By adding and subtracting the value of probable error from the coefficient of correlation, we can get the upper and lower limits respectively within which correlation coefficient in the population can be expected to lie.

The upper and lower limit within which the correlation coefficient is expected to lie is given by:

$$r - \text{P.E.} = 0.9211 - 0.0457 = 0.8745$$

$$r + \text{P.E.} = 0.9211 + 0.0457 = 0.9668$$

Hence, the correlation coefficient is expected to lie between 0.8745 and 0.9668.

Karl Pearson's Coefficient of Correlation (r) between EPS and DPS of EBL

.Year	EPS(X)	DPS(Y)	X²	Y²	XY
2005/06	62.78	25	3941.33	625	1569.50
2006/07	78.42	10	6149.70	100	784.20
2007/08	91.82	20	8430.91	400	1836.40
2008/09	99.99	30.	9998.00	900	2999.70
2009/10	100.16	30	10032.03	900	3004.80
	∑X=433.17	∑Y=115	∑X²=38551.96	∑Y²=2925	∑XY=10194.60

We have,

$$\begin{aligned}
 r &= \frac{n\sum XY - \sum X \sum Y}{\sqrt{(n\sum X^2 - (\sum X)^2)} \sqrt{n\sum Y^2 - (\sum Y)^2}} \\
 &= \frac{5 * 10194.60 - 433.17 * 115}{\sqrt{(5 * 38551.96 - (433.17)^2)} \sqrt{5 * 2925 - (115)^2}} \\
 &= \frac{1158.45}{\sqrt{5123.57} * \sqrt{1400}} \\
 &= 0.4325
 \end{aligned}$$

This shows that there exists positive correlation between the two variables.

Computation of Probable error (P.E.),

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

$$= \frac{1-0.4325^2}{\sqrt{5}} * 0.6745$$

$$= 0.2452$$

$$6P.E.=6*0.2452=1.4712$$

If $r > 6 P.E.$ it is indicative of statistically significant correlation.

If $r < 6 P.E.$ it is indicative of statistically insignificant correlation.

But, in case of EBL, $r < 6P.E.$ i.e. $0.4325 < 1.4712$. This implies that there is insignificant correlation between EPS and DPS of EBL.

By adding and subtracting the value of probable error from the coefficient of correlation, we can get the upper and lower limits respectively within which correlation coefficient in the population can be expected to lie.

The upper and lower limit within which the correlation coefficient is expected to lie is given by:

$$r-P.E. = 0.4325-0.2452= 0.1873$$

$$r+P.E. = 0.4325+0.2452= 0.6777$$

Hence, the correlation coefficient is expected to lie between 0.1873 and 0.6777.

Karl Pearson's Coefficient of Correlation (r) between EPS and DPS of HBL

.Year	EPS(X)	DPS(Y)	X ²	Y ²	XY
2005/06	59.29	30	3515.30	900.00	1778.70
2006/07	60.66	15	3679.64	225.00	909.90
2007/08	62.74	25	3936.31	625.00	1568.50
2008/09	61.9	12	3831.61	144.00	742.80
2009/10	31.8	11.84	1011.24	140.19	376.51
	ΣX=276.39	ΣY=93.84	ΣX²=15974.10	ΣY²=2034.19	ΣXY=5376.41

We have,

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

$$= \frac{5 * 5376.41 - 276.39 * 93.84}{\sqrt{(5 * 15974.10 - (276.39)^2)}\sqrt{5 * 2034.19 - (93.84)^2}}$$

$$= \frac{945.62}{\sqrt{3479.05 * \sqrt{1364.98}}}$$

$$= 0.4339$$

This shows that there exists positive correlation between the two variables.

Computation of Probable error (P.E.),

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

$$= \frac{1-0.4339^2}{\sqrt{5}} * 0.6745$$

$$= 0.2449$$

$$6\text{P.E.} = 6 * 0.2449 = 1.4694$$

If $r > 6 \text{ P.E.}$ it is indicative of statistically significant correlation.

If $r < 6 \text{ P.E.}$ it is indicative of statistically insignificant correlation.

But, in case of HBL, $r < 6\text{P.E.}$ i.e. $0.4339 < 1.4694$. This implies that there is insignificant correlation between EPS and DPS of HBL.

By adding and subtracting the value of probable error from the coefficient of correlation, we can get the upper and lower limits respectively within which correlation coefficient in the population can be expected to lie.

The upper and lower limit within which the correlation coefficient is expected to lie is given by:

$$r - \text{P.E.} = 0.4339 - 0.2449 = 0.189$$

$$r + \text{P.E.} = 0.4339 + 0.2449 = 0.6788$$

Hence, the correlation coefficient is expected to lie between 0.189 and 0.6788

Similarly, it is calculated on Microsoft Excel Worksheet.

Table 4.9
Correlation between EPS and DPS of the banks

Bank	r	Relationship	(r ²)	P.E.	6 P.E.	Significant/ Insignificant
NABIL	0.9211	Positive	0.8484	0.0475	0.2742	Significant
EBL	0.4325	Positive	0.1871	0.2452	1.4712	Insignificant
HBL	0.4339	Positive	0.1883	0.2449	1.4694	Insignificant

The above table shows the relationship between DPS and EPS of the three commercial banks. In this analyzing the relationship between dividend per share and earning per share has been found positive in all sample banks. It implies that earning per share affect the dividend per share. The highest positive relationship is observed NABIL Bank Ltd. which is 0.9211.

The coefficient of determination (r^2) is the square of the correlation coefficient and it measures apply of association of the two variables. The coefficient of determination between EPS and DPS of NABIL is 0.8484 which means that the variation in independent variables (EPS) explains 84.84% of the variation in dependent variables (DPS). Likewise, the value of r^2 of the EBL and HBL are 0.1871 and 0.1883 respectively. It means that in the independent explains 18.71% and 18.83% in dependent variables (DPS). From the analysis , it has been found that coefficient of determination r^2 between DPS and EPS is highest in NABIL Bank Ltd.

The Significance of relationship between EPS and DPS is measured by calculating the probable error of the correlation coefficient. From the above table we can conclude that the relationship between EPS and DPS of NABIL Bank is significant because r is greater than 6 P.E. and the relationship between EBL and HBL is insignificant because r is smaller than 6 P. E.

4.2.2 Correlation between EPS and MPS

Table 4.10

Correlation between EPS and MPS of the banks

Bank	r	Relationship	(r^2)	P.E.	6 P.E.	Significant/ Insignificant
NABIL	0.2927	Positive	0.0857	0.2758	1.6548	Insignificant
EBL	0.404	Positive	0.1632	0.1798	1.0788	Insignificant
HBL	0.8056	Positive	0.6490	0.1059	0.6354	Significant

Source: Appendix - II

The Simple correlation coefficient (r) Between EPS and MPS is 0.2927 which indicates that there is positive relationship between EPS and MPS of NABIL Bank but it is less than 6 P.E. so we concluded that it is insignificant. The coefficient of determination (r^2) is 0.0857 which indicates that 8.57% of Variation of stock price is

affected or determined by the explanatory variable EPS.

The Simple correlation coefficient (r) Between EPS and MPS is 0.404 which indicates that there is positive relationship between EPS and MPS of EBL. Since r is less than 6 P.E., we conclude that it is insignificant. The coefficient of determination (r^2) is 0.1632 which indicates that 16.32% of variation of stock price is affected or determine by the explanatory variable EPS.

Similarly, the Simple correlation coefficient (r) Between EPS and MPS of HBL is 0.8056 which indicates that there is aggressive positive relationship between EPS and MPS. Since the correlation (r) is greater than 6 P.E., we can conclude that it is significant. The coefficient of determination (r^2) is 0.6490 which indicates that 64.90%% of variation of stock price is affected or determined by the explanatory variable EPS.

4.2.3 Correlation between DPS and MPS

Table 4.11

Correlation between DPS and MPS of the banks

Bank	r	Relationship	(r^2)	P.E.	6 P.E.	Significant/ Insignificant
NABIL	0.1616	Positive	0.0261	0.2938	1.7628	Insignificant
EBL	-0.4086	Negative	0.167	0.2513	1.5078	Insignificant
HBL	0.035	Positive	0.0012	0.3013	1.8076	Insignificant

Source: Appendix - III

The coefficient of correlation between DPS and MPS of NABIL, EBL and HBL are 0.1616, -0.4086 and 0.035 respectively, which means that there is positive correlation between DPS and MPS in case of NABIL and HBL whereas there is negative correlation between DPS and MPS in case of EBL. The degree of correlation between DPS and MPS in case of NABIL and HBL is low and in case of EBL, the degree of correlation between DPS and MPS is high. The relationship between DPS and MPS of these three banks is insignificant as coefficient of correlation (r) is lesser than 6 P.E.

The coefficient of determination (r^2) of NABIL is 0.0261, which shows that 2.61% of

the variation in dependent variable MPS is explained by independent variable DPS. At the same time the coefficient of determination of EBL is 0.167 indicating 1.67% of the variation in dependent variable MPS is explained by independent variable DPS. Similarly, coefficient of determination of HBL is 0.0012 which indicates 0.12% of the total variation in dependent variable MPS is explained by independent variable DPS.

4.3 Simple Regression Analysis

The regression is used to determine the statistically relationship between two or more variable and to make prediction of one variable on the basis of others. The regression can analyze either in simple regression or multiple regressions. When we take only one independent variable and predict the value of the dependent variable through the appropriate regression line, the analysis is known as simple regression analysis.

4.3.1 Simple Regression of Dividend per share on Earning Per share

This analysis tests dependency of the dividend per share on the earning per share. Dependency of DPS on EPS is shown as follows.

Table 4.12
Simple Regression analysis of DPS on EPS

Banks	Regression constant (a)	Regression coefficient (b)	t-value (Calculated)	Tabulated value
NABIL	-76.1	1.23	4.098	2.776
EBL	3.412	0.23	0.831	2.776
HBL	3.743	0.27	0.834	2.776

Source: Appendix IV

The result presented in the above table gives the major output of simple regression analysis between DPS and EPs of three commercial banks. The above table gives the major output on simple regression analysis between dividends per share as dependent variables of the sample banks. Regression coefficient of NABIL, EBL and HBL are 1.23, 0.23 and 0.27 respectively which means if one rupee increase or decrease in EPs , it leads in average increase or decrease in DPS by Rs 1.23, Rs.0.23 and Rs.0.27 of

NABIL, EBL and HBL respectively.

The regression constant of NABIL, EBL and HBL are -76.10, 3.412 and 3.743 respectively. This indicates that if EPS is zero the DPS will not be paid by NABIL bank because regression constant of NABIL bank is in negative. But in case of EBL and HBL, they will pay dividend even if regression constant is zero.

t-values for the regression model are 4.098, 0.831 and 0.834 respectively for the NABIL, EBL and HBL respectively. This shows that the results of EBL and HBL statistically not significant at 5% level of significance because the the calculated t is lower than tabulated value but in case of NABIL bank the calculated t is greater than tabulated value so, it is significant.

4.3.1 Simple Regression of MPS on DPS

This analysis tests dependency of the market price per share on dividend per share. Dependency of MPS on DPS is shown as follows.

Table 4.13
Simple Regression analysis of MPS on DPS

Banks	Regression constant (a)	Regression coefficient (b)	t-value	T
NABIL	3565.536	6.5172	0.2836	2.776
EBL	2996.48	-34.4036	0.7754	2.776
HBL	1439.786	2.10	0.0607	2.776

Source: Appendix V

The regression coefficient between MVPS as dependent and DPS as independent variable of three sample banks are explained below. The regression coefficient of the NABIL, EBL and HBL are 6.5172, -34.4036 and 2.10 respectively. These imply that if one rupee increases in DPS of the sample banks, Rs 6.5172, -34.4036 and 2.10 respectively of NABIL, EBL and HBL increase in MVPS.

The regression constant of NABIL is 3565.536. It shows that if DP is Zero MVPS will be Rs.3565.536. The regression constant of the EBL and HBL are 2996.48 and 1439.786 respectively. It indicates that if the DPS of the sample banks are zero, their

market value per share will be Rs 3996.48, and 1439.786 of EBL and HBL respectively.

The test of “t” statistics is concluded that there is not significant in any sample banks because the calculated “t” value is smaller than tabulated value.

4.4 Multiple Regression Analysis

The regression is used to determine the statistically relationship between two or more variable and to make prediction of one variable on the basis of others. The regression can analyze either in simple regression or multiple regressions. When we take two or more independent variable and predict the value of the dependent variable through the appropriate regression line, the analysis is known as multiple regression analysis.

4.4.1 Regression of Market price per share on DPS and EPS:

To find out dependency of market price per share on the dividend per share and earning per share this analysis is tested. How does affects MPS of sample banks are analyzed below.

TABLE 4.14
Multiple Regression line of MPS on DPS and EPS

$$X_1 = a + b_1x_2 + b_2x_3$$

Bank	No of Year	Constant(a)	Regression coefficient	
			b1	b2
NABIL	5	-1661	-45.30	75.35
EBL	5	896.61	-60.73	31.24
HBL	5	342.65	-67.19	39.85

Source: Appendix VI

The above table represents the linear relationship between MPS, with DPS and E PS of sample banks. The constant (a) is negative in NABIL by -1661 and positive in EBL and HBL by 896.61 and 342.65 respectively.

In case of NABIL the beta coefficient of DPS and EPS are -45.30 and 75.35 respectively. It indicates that one rupee increase in DPS leads to Rs 45.30 decrease in

MPS and one rupee increase in EPS leads to an average about Rs 75.35 increase in MPS.

In case of EBL the beta coefficient of DPS and EPS are -60.73 and 31.24 respectively. It indicates that one rupee increase in DPS leads to Rs 60.73 decrease in MPS and one rupee increase in EPS leads to an average about Rs 31.24 increase in MPS.

In case of HBL the beta coefficient of DPS and EPS are -67.19 and 39.85 respectively. It indicates that one rupee increase in DPS leads to Rs 67.19 decrease in MPS and one rupee increase in EPS leads to an average about Rs 39.85 increase in MPS.

4.5 Testing of Hypothesis

Testing of hypothesis is one of the most important aspects of the theory decision making. It consists of decision rules required for drawing probabilistic inference about the population parameters. It often involves deciding at any given point time whether a given population parameter is the same as before or has changed. For the decision making related dividend factor three hypotheses are tested.

4.5.1 First Hypothesis

To find out significance difference between mean of DPS of sample banks, first hypothesis is tested under following ANOVA table.

Table 4.15

ANOVA analysis of DPS of sample Banks

Source of Variation	Sum of Square (S.S).	Degree of freedom	Mean Sum of Square (M. S.S.)	F- Ratio
Due to Column	SSC = 5679.86	$k-1=3-1=2$	$MSC = ssc/k-1$ $= 5679.86/2$ $= 2839.93$	$F = MSC/MSE$ $= 2839.93/1852.44$ $= 1.53$

Within the Samples(errors)	SSE = 22229.33	14-2 =12	MSE = SSE/12 22229.33/12= 1852.44	
Total	SST = 2306.44	n-1=15-1=14		

Source: Appendix VII

From the above table, we get calculated F at 2, 12 degree of freedom is 1.53.

The tabulated value of F at 5% level of significance at 2, 12 degree of freedom (df) is 3.89.

Decision: Since the calculated value of F is less than tabulated value of the F. So, it is not significant and H_0 is accepted and alternative hypothesis (H_1) is rejected. It means there is no significance difference in DPS of NABIL, EBL and HBL.

4.5.2 Second Hypothesis

To find out significance difference between mean of DPR of Sample Banks, second hypothesis is tested under following ANOVA table.

Table 4.16
ANOVA analysis of DPR of sample Banks

Source of Variation	Sum of Square (S.S).	Degree of freedom	Mean Sum of Square (M. S.S.)	F- Ratio
Due to Column	SSC = 1813.756	k-1=3-1=2	MSC= ssc/k-1 = 1813.756/2 =906.88	F= MSC/MSE = 906.88/1998.033 = 0.45
Within the Samples(errors)	SSE = 23976.4	14-2 =12	MSE = SSE/12 = 23976/12 =1998.033	
Total	SST = 25790.15	n-1=15-1=14		

Source: Appendix VIII

From above table we get,

Calculated F at 2, 12 df is 0.45.

The tabulated value of F at 5% level of significance for 2, 12 degree of freedom (df) is 3.89

Decision: Since the calculated value of F is less than tabulated value of the F, it is not significant. Hence null hypothesis is accepted and alternative hypothesis is rejected. It means there is no significance difference in DPR of NABIL, EBL and HBL.

4.5.3 Third Hypothesis

To find out the significance difference between mean of DY of sample banks, third hypothesis is tested under following ANOVA table.

Table 4.15
ANOVA analysis of DY of sample Banks

Source of Variation	Sum of Square (S.S).	Degree of freedom	Mean Sum of Square (M. S.S.)	F- Ratio
Due to Column	SSC = 0.8997	k-1=3-1=2	MSC= ssc/k-1 = 0.8997/2 =0.4498	F= MSC/MSE = 0.4498/3.4874 = 0.13
Within the Samples(errors)	SSE = 41.8489	14-2 =12	MSE = SSE/12 = 41.8489/12 =3.4874	
Total	SST = 42.7486	n-1=15-1=14		

Source: Appendix IX

From the above table, we get

Calculated F at (2, 12) df is 0.13

The tabulated value of F at 5% level of significance for (2, 12) degree of freedom (df) is 3.89

Decision: Since the calculated value of F is less than tabulated value of The F it is not significant. Hence null hypothesis H_0 is accepted and alternative hypothesis H_1 is rejected. It means there is no significance difference in DY of NABIL, EBL and HBL.

4.6 Major Findings of the Study

The major findings that have drawn from analysis of secondary data and primary data are presented below;

- There is no regularity in DPS of Sample banks in dividend payment. NABIL banks dividend comparatively better than other two banks. The C. V. of the ranges 32.54% to 44.05% and there is no consistency in dividend payment. NABIL bank's C V is more consistency than other bank. In the analysis of three sample banks DPS of NABIL bank is in better condition.
- Average earning per share (EPS) of NABIL bank is greater than that of EBL and HBL. By the analysis of coefficient of variation, it indicates that there is

greater fluctuation in EPS of HBL than NABIL and. It means EBL have relatively consistent EPS comparing with NABIL and HBL.

- The analysis of dividend payout ratio gives us to find out dividend policy and practices adopted by the sample banks. My analysis shows that sample banks DPR has not stable. Among the sample banks NABIL bank has the higher DPR 53.01% with moderate fluctuation and EBL and HBL DPR is 26.86% , 34.36% respectively with least fluctuation.
- Comparing the average earning yield ratio of NABIL (3.20%), EBL (4.18%) and HBL (3.89%), it can be considered that that EBL is more efficient in earning than that of NABIL bank and Himalayan Bank Ltd. on the basis of market price of share.
- On the analysis of dividend Yield ratio NABIL bank is stronger than other two banks. The average dividend yield of bank is 1.18% to 1.78%. In the CV analysis NABIL 61.19% is more fluctuate than other sample banks 49.52 of EBL and 51.66 of HBL.
- The market value of shares in case of all the sample banks is fluctuating. The trend is not consistent. It is rising and falling each successive year. However, it is somehow satisfactory in the case of EBL as the difference in MPS caused is not much as of NABIL and HBL. The average MPS of NABIL is greater than that of EBL and HBL.
- The market value per shares to book net worth per share in case of all the sample banks is fluctuating. The trend is not consistent. It is rising and falling each successive year. The average of MPS to BVPS ratio of NABIL is greater than that of EBL and HBL. The average MPS to BVPS ratio of NABIL, EBL and HBL are 11.40, 7.22 and 5.97 times respectively. In the CV analysis NABIL 31.10% is more fluctuate than other sample banks 22.38 of EBL and 26.18 of HBL.
- The relationship between DPS of all sample banks with EPS is positively correlated. Correlation coefficient between DPS and EPS three sample banks are also positively correlated. But the relationship between DPS and MPS of

two sample banks (NABIL bank and HBL) have positive whereas EBL has negative.

- The regression coefficient of DPS on EPS of NABIL, EBL and HBL are positive values. Which indicates that DPS is influenced by any factor else than EPS. The coefficient of NABIL is high in comparison with other two sample banks. From the regression analysis it can be concluded that a change in EPS affects the DPS differently in different banks.
- t-values for the regression model, DPS on EPS are 4.098, 0.831 and 0.834 for the NABIL, EBL and HBL respectively. This shows that the results of EBL and HBL statistically not significant at 5% level of significance because the the calculated t is lower than tabulated value but in case of NABIL bank the calculated t is greater than tabulated value so, it is significant.
- The regression coefficients of MPS on DPS of two sample banks are positive. EBL regression coefficient is negative. The regression coefficients of the NABIL, EBL and HBL are 6.5172, -34.4036 and 2.10 respectively.
- The test of “t” statistics for regression model, MPS on DPS results that there is not significant in any sample banks because the calculated “t” value is smaller than tabulated value.
- In case of NABIL, the beta coefficient of DPS and EPS are -45.30 and 75.35 respectively. The beta coefficient of DPS and EPS of EBL and HBL are -60.73, 31.24 and -67.19, 39.85 respectively. The beta coefficients (DPS) of three sample banks are negative whereas the beta coefficients of EPS are positive of all three banks.
- From the first hypothesis, it can be concluded at 5% level of significance Null hypothesis (H_0) is accepted and Alternative hypothesis (H_1) is rejected. It means there is not significance difference in mean of DPS of NABIL, EBL and HBL.
- From the second Hypothesis, it can be concluded that at 5% level of significance, Null Hypothesis (H_0) is accepted and Alternative Hypothesis (H_1) is rejected. It means there is no significance difference in mean of DPR of

NABIL, EBL and HBL.

- From the third hypothesis it can be concluded that at 5% level of significance, Null Hypothesis (H_0) is accepted and Alternative Hypothesis (H_1) is rejected. It means there is no significance difference in mean of DY of NABIL, EBL and HBL.

CHAPTER – V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Dividend refers to that portion of firms net earning which is paid out to the shareholders. Dividend serves as simple, comprehensive signal of management's interpretation of the firm's recent performance and its future prospects. The improved corporate dividend practices are thus essential means to solve the problem of asymmetric information between companies and Nepalese investors, who has poured their fund in.

An effective way to attract new investors to invest in shares is paying dividend. Due to division of earnings of a company between dividend payout and retention of earnings, its effect on market price of shares is crucial questions. Thus, a wise policy should be maintained between shareholders interest and corporate growth from internally generated funds. The funds could not be used in case of lack of investment opportunities. Dividend payment to shareholders is taken as best in such a condition, because shareholders have investment opportunities to imply elsewhere. In the changed context of encouraging secondary market, it is time to study influences of other factors on dividend and implication of dividend on market price per shares. The study has tried to cover some such factors. However it is not enough due to some limitation.

The study mainly aims to analyze the existing dividend practices of sample banks. Its specific objectives are:

- a. To analyze the existing dividend practices of sample banks in terms of DPS, DPR, EY, DY and Market value per share to book net worth per share.
- b. To analyze the relationship of dividend with earning per share, market price per share.
- c. To find out the effect on market value per share due to DPS and EPS.
- d. To find out significance difference between mean of DPS, DPR and DY of sample commercial banks.

Among 31 commercial banks only three commercial banks NABIL bank Ltd., Everest

bank ltd. And Himalayan Bank Ltd. has been taken as sample banks for the study. The study has covered a period of five fiscal years from 2005/2006 to 2009/2010. The study has been conducted on the secondary data such as annual reports of selected banks. For the analysis of data different financial tools like DPS, DY, DPR, and statistical tools such as mean, standard deviation, correlation coefficient regression and hypothesis have been used.

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

5.2 Conclusion

From the finding of primary data, it can be concluded that commercial banks distribute dividend to attract potential investors. Banks market price per share is highly affected by dividend policy. Liquidity position is important factor while adopting dividend policy. The major motive of cash dividend of commercial bank is to convey information to shareholders that the company is doing well. The dividend practices followed of Nepalese commercial bank is payment of dividend after financing in appropriate investment opportunities. Chief executive officer is the most influential in developing the dividend decision in Nepalese commercial banks. Banks reexamine their dividend policy normally annually. Commercial banks should be consistency in dividend policy in Nepalese enterprises.

The above mentioned secondary data analysis of major findings give this study to conclude that according to different financial indicators tools of the three sample banks, it shows that average dividend per share of NABIL bank is higher than other EBL and HBL. This indicates that NABIL is paying higher dividend than other sample banks to its shareholders.

Above mentioned major findings leads this study conclude that earning of sample banks. NABIL is comparatively higher than other sample banks. NABIL is comparatively higher than Other sample banks .The result of this analysis are not

strong enough to establish the relationship between dividend policy and dividend practices of Nepalese banks and it shows dividend practices in Nepal.

On the basis of average dividend payout ratio, NABIL Bank is paying higher portion of dividend of its earning as dividend than other two sample banks. On the basis of DY ratio NABIL bank is more efficient than EBL and HBL for distribution of dividend on the basis of market price per share.

As for the simple regression of dividend per share on earning per share beta coefficient is positive in all sample banks. The positive sign of beta coefficient of earning per share indicates that dividend per share increase with higher per share in sample banks remaining other variable constant. On the basis of regression analysis Market price per share on dividend per share two sample banks beta coefficient are positive and EBL beta coefficient is negative. If beta coefficient is positive, it means that increase in dividend per share results increase in market price per share of sample banks. On the multiple regression analysis regression coefficient b_1 in all sample banks are negative. It concluded that DPS affect negatively on MPS. On the other hand regression coefficient b_2 in all sample banks have positive. Hence it concluded that EPS increase the MPS of all sample banks. The relationship between dividends per share with earning per share, market value per share is positive in these sample banks.

The correlation of DPS and EPS of NABIL, EBL and HBL has found 0.9211, 0.4325 and 0.4339 respectively and has positive correlation in all sample banks. It implies that earning per share affect the dividend per share. The correlation between EPS and MPS of NABIL, EBL and HBL has found 0.2927, 0.404 and 0.8056 respectively and positive in all sample banks. It implies that EPS affect MPS. Similarly, the correlation of DPS and MPS of NABIL bank and HBL is positive but the correlation of DPS and MPS of EBL is negative. It implies that DPS affect MPS.

On the basis of hypothesis test there is no significance difference between mean of DPS, DPR and DY of sample commercial banks.

5.3 Recommendations

On the basis of major findings of the study following recommendations can be made.

- I. Banks Should is paid dividend adopting any appropriate policy. Banks should have their clearly defined dividend policy. Clearly defined dividend policy helps to determine specific policy such as stable dividend or low regular plus extra. What should be the long run dividend payout ratio; either it is pure residual policy, fixed dividend payout policy should have been clearly explained. This short of policy helps to investors in deciding whether to buy or not the share of particular company. It also helps to build good image stock market. This kind of policy should be passed only one the conscious of shareholders. The tendency of management interference in policy matters should be eliminated.
- II. There is lack of rules binding companies to pay dividend. So the Government of Nepal, SEBON, and NEPSE should act in favor of the investor and should bind through such legal provision so that the profit earning companies should distribute certain of their earning as dividend.
- III. Most of the banks have great fluctuation on dividend per share. Earnings per share, dividend yield and dividend payout ratio and share price in terms of coefficient of variation. Such fluctuation increases in risk position of investors. Therefore, company should to stabilize these variables.
- IV. Payment of dividend is neither static nor constantly growing. It is highly fluctuating; such way of paying dividend could not impress the market positively. SO, these banks are advised to follow either static or constantly growing dividend policy. It would be better to fix the amount of dividend in the general annual meeting. This is important not only from the point of view of adequate return to shareholders but also to generate stable and increasing market value per share, long run survival of bank, efficient management and socially acceptable distribution of income.
- V. EPS should be considered as a major factor in determining the dividend. It is important to consider earning rather than neglecting it while making dividend decision.

- VI.** Any organization should be formed by the intellectual shareholders for working in favor of Nepalese investors, which should be recognized by the government. The government should this kind of organization to promote these activates and to protect the interest of investors.
- VII.** Banks are playing on the public money. So in this regard they are advised to have target rate of earning and target payout ratio that will help companies to build good image in stock market and investors will be ease in making investment decision.
- VIII.** Formulation of dividend policy will clearly guide the way on how to follow dividend distribution strategy. The policy should determine whether the company is going to adopt stable dividend policy, constant pay out ration or low regular plus extra dividends. What should be the long run dividend payout ratio, either it is pure residual policy should have been clearly explained by the dividend policy.
- IX.** Each and every company should provide the information regarding their activities and performance, so that investors can analyze the situation and invest their money in the best company.
- X.** Companies should have long term vision regarding earnings and dividend payment that helps to cope with challenging competitive situation of present world. Companies should define their vision clearly considering their future plans, expansion of business, future economy of country. Considering various internal and external factors, companies should choose whether to adopt stable dividend policy or constant payout ratio or low plus extra or leaving dividend as residual.
- XI.** The legal rules and regulation must be in favor of investors to exercise the dividend practice and to protect the shareholders' rights.
- XII.** The legal rule for the treatment of dividend is must for the smooth growth of any enterprise as well as growth of national economy. Some of the companies are in position to pay dividend while considered some case. But some companies are suffering loss and there are efforts to minimize loss rather than

payment of dividend.

XIII. It is recommended to the concerned parties that the optimum dividend policy must be based on the following criteria:

- a) Optimum retention is made for excellent expansion and modernization.
- b) Optimum dividend so that market value per share will increase rapidly i.e. net present value of shareholders wealth can be maximized.

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APPENDICES

Appendix- I

**Sample Calculation of Mean, Standard Deviation, and Coefficient of variation f
or DPS of various banks in different years**

Year	NABIL	EBL	HBL
2005/06	85	25	30
2006/07	100	10	15
2007/08	60	20	25
2008/09	35	30	12
2009/10	30	30	11.84
Total	310	115	93.84

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

$$\text{NABIL} = \frac{310}{5} = 62$$

$$\text{EBL} = \frac{115}{5} = 23$$

$$\text{HBL} = \frac{93.84}{5} = 18.768$$

Standard Deviation

$$\delta = \sqrt{\frac{\sum(x-\bar{x})^2}{n}}$$

$$\text{NABIL} = \sqrt{\frac{\sum((85-62)(100-62)(60-62)(35-62)(30-62))^2}{5}} = 27.31$$

$$\text{EBL} = 7.48$$

$$\text{HBL} = 7.39$$

Coefficient of variation (C.V.)

$$cv = \frac{(s.d * 100)}{\text{mean}}$$

$$\text{NABIL} = \frac{(27.31 * 100)}{62} = 44.05$$

$$\text{EBL} = 32.54$$

$$\text{HBL} = 39.37$$

Appendix- II
Karl Pearson's Coefficient of Correlation (r) between EPS and MPS of NABIL

Year	EPS(X)	MPS(Y)	X ²	Y ²	XY
2005/06	129.21	2240	16695.22	5017600.00	289430.40
2006/07	137.08	5050	18790.93	25502500.00	692254.00
2007/08	108.31	5275	11731.06	27825625.00	571335.25
2008/09	106.76	4899	11397.70	24000201.00	523017.24
2009/10	78.61	2384	6179.53	5683456.00	187406.24
Total	559.97	19848.00	64794.44	88029382.00	2263443.13

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

$$= \frac{5 * 2263443.13 - 559.97 * 19848}{\sqrt{(5 * 64794.44 - (559.97)^2)} \sqrt{5 * 88029382 - (19848)^2}}$$

$$= \frac{202931.09}{\sqrt{10405.78} * \sqrt{46203806}}$$

$$= 0.2927$$

Computation of Probable error (P.E.),

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

$$= \frac{1-0.2927^2}{\sqrt{5}} * 0.6745$$

$$= 0.2758$$

$$6P.E. = 6 * 0.2758 = 1.6548$$

Karl Pearson's Coefficient of Correlation (r) between EPS and MPS of EBL

Year	EPS(X)	MPS(Y)	X ²	Y ²	XY
2005/06	62.78	1379	3941.33	1901641.00	86573.62
2006/07	78.42	2430	6149.70	5904900.00	190560.60
2007/08	91.82	3132	8430.91	9809424.00	287580.24
2008/09	99.99	2455	9998.00	6027025.00	245475.45
2009/10	100.16	1630	10032.03	2656900.00	163260.80
Total	433.17	11026.00	38551.96	26299890.00	973450.71

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

$$= \frac{5 * 973450.71 - 433.17 * 11026}{\sqrt{(5 * 38551.96 - (433.17)^2)} \sqrt{5 * 26299890 - (11026)^2}}$$

$$= \frac{91121.13}{\sqrt{5123.57 * \sqrt{9926774}}}$$

$$= 0.404$$

Computation of Probable error (P.E.),

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

$$= \frac{1-0.404^2}{\sqrt{5}} * 0.6745$$

$$= 0.1798$$

$$6P.E.=6*0.1798=1.0788$$

Karl Pearson's Coefficient of Correlation (r) between EPS and MPS of HBL

Year	EPS(X)	MPS(Y)	X ²	Y ²	XY
2005/06	59.29	1100	3515.30	1210000.00	65219.00
2006/07	60.66	1740	3679.64	3027600.00	105548.40
2007/08	62.74	1980	3936.31	3920400.00	124225.20
2008/09	61.9	1760	3831.61	3097600.00	108944.00
2009/10	31.8	816	1011.24	665856.00	25948.80
Total	276.39	7396.00	15974.10	11921456.00	429885.40

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

$$= \frac{5 * 429885.40 - 276.39 * 7396}{\sqrt{(5 * 15974.10 - (276.39)^2)\sqrt{5 * 11921456 - (7396)^2}}}$$

$$= \frac{105246.56}{\sqrt{3479.05 * \sqrt{4906464}}}$$

$$= 0.8056$$

Computation of Probable error (P.E.),

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

$$= \frac{1-0.8056^2}{\sqrt{5}} * 0.6745$$

$$= 0.1059$$

$$6P.E.=6*0.1059=0.6354$$

Appendix - III

Karl Pearson's Coefficient of Correlation (r) between DPS and MPS of NABIL

Year	DPS(X)	MPS(Y)	X ²	Y ²	XY
2005/06	85	2440	7225.00	5953600.00	207400.00
2006/07	100	5050	10000.00	25502500.00	505000.00
2007/08	60	5275	3600.00	27825625.00	316500.00
2008/09	35	4899	1225.00	24000201.00	171465.00
2009/10	30	2384	900.00	5683456.00	71520.00
Total	310.00	20048.00	22950.00	88965382.00	1271885.00

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

$$= \frac{5 * 1271885 - 310 * 20048}{\sqrt{(5 * 22950 - (310)^2)}\sqrt{5 * 88965382 - (20048)^2}}$$

$$= \frac{144545}{\sqrt{18650} * \sqrt{42904606}}$$

$$= 0.1616$$

Computation of Probable error (P.E.),

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

$$= \frac{1-0.1616^2}{\sqrt{5}} * 0.6745$$

$$= 0.2938$$

$$6P.E.=6*0.2938=1.7628$$

Karl Pearson's Coefficient of Correlation (r) between DPS and MPS of EBL

Year	DPS(X)	MPS(Y)	X ²	Y ²	XY
2005/06	25	1379	625.00	1901641.00	34475.00
2006/07	10	2430	100.00	5904900.00	24300.00
2007/08	20	3132	400.00	9809424.00	62640.00
2008/09	30	2455	900.00	6027025.00	73650.00
2009/10	30	1630	900.00	2656900.00	48900.00
Total	115.00	11026.00	2925.00	26299890.00	243965.00

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

$$= \frac{5 * 243965 - 115 * 11026}{\sqrt{(5 * 2925 - (115)^2)}\sqrt{5 * 26299890 - (11026)^2}}$$

$$= \frac{-48165}{\sqrt{1400} * \sqrt{9926774}}$$

$$= -0.4086$$

Computation of Probable error (P.E.),

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

$$= \frac{1-(-0.4086)^2}{\sqrt{5}} * 0.6745$$

$$= 0.2513$$

$$6P.E.=6*0.2513=1.5078$$

Karl Pearson's Coefficient of Correlation (r) between DPS and MPS of HBL

Year	DPS(X)	MPS(Y)	X ²	Y ²	XY
2005/06	30	1100	900.00	1210000.00	33000.00
2006/07	15	1740	225.00	3027600.00	26100.00
2007/08	25	1980	625.00	3920400.00	49500.00
2008/09	12	1760	144.00	3097600.00	21120.00
2009/10	11.84	816	140.19	665856.00	9661.44
Total	93.84	7396.00	2034.19	11921456.00	139381.44

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

$$= \frac{5 * 139381.44 - 93.84 * 7396}{\sqrt{(5 * 2034.19 - (93.84)^2)}\sqrt{5 * 11921456 - (7396)^2}}$$

$$= \frac{2866.56}{\sqrt{1364.98} * \sqrt{4906464}}$$

$$= 0.035$$

Computation of Probable error (P.E.),

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

$$= \frac{1-0.035^2}{\sqrt{5}} * 0.6745$$

$$= 0.3013$$

$$6P.E.=6*0.3013=1.8076$$

Appendix- IV

Simple regression analysis of dividend per share on Earning per share of NABIL

Year	EPS(X)	DPS(Y)	XY	X ²	Y ²
2005/06	129.21	85.00	10982.85	16695.22	7225.00
2006/07	137.08	100.00	13708.00	18790.93	10000.00
2007/08	108.31	60.00	6498.60	11731.06	3600.00
2008/09	106.76	35.00	3736.60	11397.70	1225.00
2009/10	78.61	30.00	2358.30	6179.53	900.00
Total	559.97	310.00	37284.35	64794.44	22950.00
Average	111.99	62.00			

$$\text{Regression coefficient (b)} = \frac{\sum XY - n\bar{X}\bar{Y}}{\sum X^2 - n\bar{X}^2} = 1.23$$

$$\text{Regression constant (a)} = \bar{Y} - b\bar{X} = -76.0964$$

$$\text{T-value} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.9211\sqrt{5-2}}{\sqrt{1-0.9211^2}}$$

$$= 4.0978$$

Simple regression analysis of dividend per share on Earning per share of EBL

Year	EPS(X)	DPS(Y)	XY	X ²	Y ²
2005/06	62.78	25.00	1569.50	3941.33	625.00
2006/07	78.42	10.00	784.20	6149.70	100.00
2007/08	91.82	20.00	1836.40	8430.91	400.00
2008/09	99.99	30.00	2999.70	9998.00	900.00
2009/10	100.16	30.00	3004.80	10032.03	900.00
Total	433.17	115.00	10194.60	38551.96	2925.00
Average	86.63	23.00			

$$\text{Regression coefficient (b)} = \frac{\sum XY - n\bar{X}\bar{Y}}{\sum X^2 - n\bar{X}^2} = 0.23$$

$$\text{Regression constant (a)} = \bar{Y} - b\bar{X} = 3.4119$$

$$T\text{-value} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.4325\sqrt{5-2}}{\sqrt{1-0.4325^2}}$$

$$= 0.8308$$

Simple regression analysis of dividend per share on Earning per share of HBL

Year	EPS(X)	DPS(Y)	XY	X ²	Y ²
2005/06	59.29	30.00	1778.70	3515.30	900.00
2006/07	60.66	15.00	909.90	3679.64	225.00
2007/08	62.74	25.00	1568.50	3936.31	625.00
2008/09	61.90	12.00	742.80	3831.61	144.00
2009/10	31.80	11.84	376.51	1011.24	140.19
Total	276.39	93.84	5376.41	15974.10	2034.19
Average	55.28	18.77			

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

$$= 0.27$$

$$\text{Regression constant (a)} = \bar{Y} - b\bar{X} = 3.7432$$

$$T\text{-value} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.4339\sqrt{5-2}}{\sqrt{1-0.4339^2}}$$

$$= 0.8342$$

Appendix- V

Simple regression analysis of MPS on DPS of NABIL

Year	DPS (X)	MPS(Y)	XY	X ²	Y ²
2005/06	85	2240	190400	7225	5017600
2006/07	100	5050	505000	10000	25502500
2007/08	60	5275	316500	3600	27825625
2008/09	35	4899	171465	1225	24000201
2009/10	30	2384	71520	900	5683456
Total	310	19848	1254885	22950	88029382
Average	62.00	3969.60			

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

$$= 6.5172$$

$$\text{Regression constant (a)} = \bar{Y} - b\bar{X} = 3565.536$$

$$\text{T-value} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.1616\sqrt{5-2}}{\sqrt{1-0.1616^2}}$$

$$= 0.2836$$

Simple regression analysis of MPS on DPS of EBL

Year	DPS (X)	MPS(Y)	XY	X ²	Y ²
2005/06	25	1379	34475	625	1901641
2006/07	10	2430	24300	100	5904900
2007/08	20	3132	62640	400	9809424
2008/09	30	2455	73650	900	6027025
2009/10	30	1630	48900	900	2656900
Total	115	11026	243965	2925	26299890
Average	23.00	2205.20			

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

$$= -34.4036$$

$$\text{Regression constant (a)} = \bar{Y} - b\bar{X} = 2996.48$$

$$\text{T-value} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{-0.4086\sqrt{5-2}}{\sqrt{1-(-0.4086)^2}}$$

$$= -0.7754$$

Simple regression analysis of MPS on DPS of HBL

Year	DPS (X)	MPS(Y)	XY	X ²	Y ²
2005/06	30	1100	33000	900	1210000
2006/07	15	1740	26100	225	3027600
2007/08	25	1980	49500	625	3920400
2008/09	12	1760	21120	144	3097600
2009/10	11.84	816	9661.44	140.19	665856
Total	93.84	7396.00	139381.44	2034.19	11921456
Average	18.77	1479.20			

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

$$= 2.10$$

$$\text{Regression constant (a)} = \bar{Y} - b\bar{X} = 1439.786$$

$$\text{T-value} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0.035\sqrt{5-2}}{\sqrt{1-0.035^2}}$$

$$= 0.0607$$

Appendix- VI

Multiple regressions of MPS on DPS and EPS of NABIL

Let , X₁, X₂ and X₃ be the MPS, DPS and EPS respectively.

Year	X ₁	X ₂	X ₃	X ₁ X ₂	X ₁ X ₃	X ₂ X ₃	X ₂ ²	X ₃ ²
2005/06	2240	85	129.21	190400	289430.4	10982.85	7225	16695.22
2006/07	5050	100	137.08	505000	692254	13708	10000	18790.93
2007/08	5275	60	108.31	316500	571335.25	6498.6	3600	11731.06
2008/09	4899	35	106.79	171465	523164.21	3737.65	1225	11404.1
2009/10	2384	30	78.61	71520	187406.24	2358.3	900	6179.532
Total	19848	310	560	1254885	2263590.1	37285.4	22950	64800.84

We have, the regression line of X₁, X₂ and X₃ is,

$$X_1 = a + b_1 X_2 + b_2 X_3$$

Here,

a, b₁ and b₂ are estimated by solving the following equations.

$$\sum X_1 = na + b_1 \sum X_2 + b_2 \sum X_3 \dots \dots \dots (i)$$

$$\sum X_1 X_2 = a \sum X_2 + b_1 \sum X_2^2 + b_2 \sum X_2 X_3 \dots \dots \dots (ii)$$

$$\sum X_2 X_3 = a \sum X_3 + b_1 \sum X_2 X_3 + b_2 \sum X_3^2 \dots \dots \dots (iii)$$

From equation (i), (ii) and (iii) ,we get;

$$19848 = 5a + 310b_1 + 560 b_2 \dots \dots \dots (iv)$$

$$1254885 = 310a + 22950b_1 + 37285b_2 \dots \dots \dots (v)$$

$$2263590 = 560a + 37285b_1 + 64801b_2 \dots \dots \dots (vi)$$

By; solving above equatio(iv), (v) and (vi) we get;

$$a = -1661$$

$$b_1 = -45.30$$

$$b_2 = 75.35$$

Multiple regression of MPS on DPS and EPS of EBL

Let X1, X2 and X3 be the MPS, DPS and EPS respectively.

Year	X1	X2	X3	X1X2	X1X3	X2X3	X2 ²	X3 ²
2005/06	1379	25	62.78	34475	86573.62	1569.5	625	3941.328
2006/07	2430	10	78.42	24300	190560.6	784.2	100	6149.696
2007/08	3132	20	91.82	62640	287580.24	1836.4	400	8430.912
2008/09	2455	30	99.99	73650	245475.45	2999.7	900	9998
2009/10	1630	30	100.16	48900	163260.8	3004.8	900	10032.03
Total	11026	115	433.17	243965	973450.71	10194.6	2925	38551.96

We have, the regression line of X1, X2 and X3 is,

$$X_1 = a + b_1 X_2 + b_2 X_3$$

Here,

a, b1 and b2 are estimated by solving the following equations.

$$\sum X_1 = na + b_1 \sum X_2 + b_2 \sum X_3 \dots \dots \dots (i)$$

$$\sum X_1 X_2 = a \sum X_2 + b_1 \sum X_2^2 + b_2 \sum X_2 X_3 \dots \dots \dots (ii)$$

$$\sum X_2 X_3 = a \sum X_3 + b_1 \sum X_2 X_3 + b_2 \sum X_3^2 \dots \dots \dots (iii)$$

Putting the value of X1, X2 and X3 on above equations then we get;

$$a = 896.61$$

$$b_1 = -60.73$$

$$b_2 = 31.24$$

Multiple regression of MPS on DPS and EPS of HBL

Let X1, X2 and X3 be the MPS, DPS and EPS respectively.

Year	X1	X2	X3	X1X2	X1X3	X2X3	X2 ²	X3 ²
------	----	----	----	------	------	------	-----------------	-----------------

2005/06	100	30	59.29	3000	5929	1778.7	900	3515.3041
2006/07	1740	15	60.66	26100	105548.4	909.9	225	3679.6356
2007/08	1980	25	62.74	49500	124225.2	1568.5	625	3936.3076
2008/09	1760	12	61.9	21120	108944	742.8	144	3831.61
2009/10	816	11.84	31.8	9661.44	25948.8	376.512	140.1856	1011.24
Total	6396	93.84	276.39	109381.44	370595.4	5376.412	2034.186	15974.0973

We have, the regression line of X_1 , X_2 and X_3 is,

$$X_1 = a + b_1 X_2 + b_2 X_3$$

Here,

a, b_1 and b_2 are estimated by solving the following equations.

$$\sum X_1 = na + b_1 \sum X_2 + b_2 \sum X_3 \dots \dots \dots (i)$$

$$\sum X_1 X_2 = a \sum X_2 + b_1 \sum X_2^2 + b_2 \sum X_2 X_3 \dots \dots \dots (ii)$$

$$\sum X_2 X_3 = a \sum X_3 + b_1 \sum X_2 X_3 + b_2 \sum X_3^2 \dots \dots \dots (ii)$$

Putting the value of X_1 , X_2 and X_3 on above equations then we get;

$$a = 342.65$$

$$b_1 = -67.19$$

$$b_2 = 39.85$$

Appendix – VII

Hypothesis testing

Let X_1, X_2, X_3 be the DPS of NABIL, EBL and HBL respectively			
Year	X1	X2	X3
2005/06	85	25	30
2006/07	100	10	15
2007/08	60	20	25
2008/09	35	30	12
2009/10	30	30	11.84
Total	310	115	93.84

Now,

$$T = \text{Sum of all observation} \\ = (310 + 115 + 93.84) = 518.84$$

$$\text{Correlation factor} = \frac{T^2}{N} = \frac{518^2}{15} = 17946.33$$

TSS = Total Sum of Square

$$= (85)^2 + (25)^2 + (30)^2 + (100)^2 + (10)^2 + (15)^2 + (60)^2 + (20)^2 + (25)^2 + (35)^2 + (30)^2 \\ + (11.84)^2 \\ = 27909.19$$

$$\begin{aligned}
\text{SSC} &= \text{Sum of Square due to column} \\
&= \frac{310^2}{5} + \frac{115^2}{5} + \frac{93.84^2}{5} - \frac{T^2}{N} \\
&= 23626.19 - 17946.33 \\
&= 5679.86
\end{aligned}$$

$$\begin{aligned}
\text{SSE} &= \text{Sum of Square due to Error} \\
&= \text{TSS} - \text{SSC} \\
&= 22229.33
\end{aligned}$$

Appendix – VIII

Hypothesis testing

Let X1, X2, X3 be the DPR of NABIL, EBL and HBL respectively			
Year	X1	X2	X3
2005/06	65.78	39.82	50.6
2006/07	72.95	12.75	24.73
2007/08	55.4	21.78	39.85
2008/09	32.78	30	19.39
2009/10	38.16	29.95	37.23
Total	265.07	134.3	171.8

Now,

$$\begin{aligned}
T &= \text{Sum of all observation} \\
&= 571.17
\end{aligned}$$

$$\text{Correlation factor} = \frac{T^2}{N} = 21749.01$$

$$\begin{aligned}
\text{TSS} &= \text{Total Sum of Square} \\
&= 25790.15
\end{aligned}$$

$$\begin{aligned}
\text{SSC} &= \text{Sum of Square due to column} \\
&= 1813.756
\end{aligned}$$

$$\begin{aligned}
\text{SSE} &= \text{Sum of Square due to Error} \\
&= \text{TSS} - \text{SSC} \\
&= 23976.4
\end{aligned}$$

Appendix – IX

Hypothesis testing

Let X1, X2, X3 be the DY of NABIL, EBL and HBL respectively			
Year	X1	X2	X3
2005/06	3.79	1.81	2.73
2006/07	1.98	0.41	0.86
2007/08	1.14	0.64	1.26
2008/09	0.71	1.22	0.68
2009/10	1.26	1.84	1.45
Total	8.88	5.92	6.98

Now,

$$\begin{aligned} T &= \text{Sum of all observation} \\ &= 21.78 \end{aligned}$$

$$\text{Correlation factor} = \frac{T^2}{N} = 31.623$$

$$\begin{aligned} \text{TSS} &= \text{Total Sum of Square} \\ &= 42.7486 \end{aligned}$$

$$\begin{aligned} \text{SSC} &= \text{Sum of Square due to column} \\ &= 0.8997 \end{aligned}$$

$$\begin{aligned} \text{SSE} &= \text{Sum of Square due to Error} \\ &= \text{TSS} - \text{SSC} \\ &= 41.8489 \end{aligned}$$