Chapter-l

INTRODUCTION

1.1 General Background

Nepal is developing its economy from different sectors such as tourism, hydropower, construction etc. For the development of these sectors, financial institutions play a vital role to provide the financial support. Hence, various commercial banks, finance companies, insurance companies etc. are established from both government sector as well as private sector to boost the economy of the country from their perspective. So, the active participation of these financial institutions towards economic development is very important for the country.

European and American economies are the best examples for these arguments. Similarly the security against the risk is also one of the vital concerns while making investments. Therefore the two basic and important elements for an investment are fund as well as security. Bank generates the funds through different means. That is the reason the country having the efficient and effective banking facilities is seemed to be successful at the 21st century. The establishments of banks are necessary either by the government or by private sectors. Both have equal contribution for the generation as well as mobilization of the funds (Bhattarai: 2002).

Nepal has very short history of securities market. It was in 1973 A.D., when the history of securities market began with the flotation of shares by the first industrial body of the country Biratgnar jute mill Limited and the first commercial bank of Nepal, Nepal Bank Limited. Then in 1951 A.D. Company Act-1951 was introduced, and followed by the issuance of government bond in 1964 A.D. for the first time. The securities exchange centre Ltd. was established in 1976 A.D. with an objective of facilitating and promoting the growth of capital markets. Then it

was the only capital market intuitions in the country undertaking the job of brokering, underwriting, managing public issues, market making for the government bonds and other financial services(Vaidhya:1999,).

In 1993 A.D., the security exchange centre was converted into Nepal Stock Exchange(NEPSE) with an objective of providing free marketability and liquidity to the government and corporative securities by facilitating transactions in its own trading floor through the market intermediaries, i.e. brokers as well as market makers. Nepal Stock Exchange is a non profit organization operating under security exchange act-1983. NEPSE opened its trading floor on 13th January 1994 A.D. Members of Nepal Stock Exchange (NEPSE) are permitted to act as intermediaries in buying and selling of government bonds and listed corporate securities. At present there are 23 numbers of brokers and 2 market makers who operate on the trading floor as per the securities exchange act -1983 A.D., rules and by laws (www.nepalstock.com:2010).

Dividend in the simple term is the part of earnings which is announced to distribute between stockholders. In one way it is the cost of sacrificing hard money but as an investment. But unfortunately, some company pay whole as dividend and some company do not and some company more retains more and pay less as dividend.

In practice, company pays whole earning as dividend at the beginning to create better image and existence in the financial market but later they may change their policy and announced a certain percentage of pay out term. The decision to keep some portion of earning or pay some portion of earnings as dividend as known as dividend policy (khattiwoda:2001).

The payment of the corporate dividend is at the discretion of the board of directors most corporations pay dividend quarterly. Dividends may be paid in cash and stock. Cash dividend is the most common. Stockholders are not promised a

dividend. But he \she grows to expect certain payment a historical dividend pattern of the firm. Before dividend are pay to common stockholders the claims of creditors the government and preferred stockholders must be satisfied. (Gateman: 1988).

Stock valuation is an economic process that generates rational securities prices. Although price fluctuations may seem to be chaotic, they are random fluctuations that result from the random arrival of new information (Clark: 1990).

Dividend policy and MPS are always positive correlated. If a company pays dividend, MPS increases and vice versa. But in some cases dividend decision may have no impact at all upon the market price of stock i.e. MPS may remain constants or even decrease some times in response to the dividend distribution. Therefore information gap also plays vital role in the analysis of MPS (Dangol: 2006).

Dividend policy is an integral part of financial decision. The dividend policy is a major decision for the board of directors as the board of directors has to decide between paying out to shareholders and keep them happy in the short run or retain for investment which may be more beneficial to the shareholder in the long run. Dividend policy determines the division of earning between payments to stockholders and reinvestment in the firm. Retained earnings are one of the most significant sources of funds for financial corporate growth, but dividends constitute the cash flows that accrue to stockholders.

Dividend can be distributed to shareholders by a company in form of cash, shares or both. Some companies paid dividend whole amount of profit as dividend for good image, some retained all amount for reinvestment and same partial amount paid the as dividend (Dahal: 2010).

Dividend policy is a major decision of the firm. Mostly, dividend is paid in cash to its shareholders. Dividend payment reduces the total amount of internal financing.

Consequently, it must be consider in relation to the overall financial decision. " A commercial Bank is a dealer of money and substitute of money, such as check or a bill of exchange its also provides a variety of financial services"(The Encyclopedia of Britannic:1985).

In Nepal, there are few numbers of companies which pay stable dividend. Others are not able in the payment of dividends and some companies which are not paying any dividend because they have lack of profit. In case of Joint Venture Commercial banks they are paying dividing to attract the Investors and they are the leading companies in the capital Market as their number of transactions and market price per share is usually high. They bring the new trend to distribute the dividend, which encourage the investors to invest in the companies and mobilize the fund.

So, this study aims to mobilize the fund prevailing practice and policies, relevant factors of some Nepal's listed Commercial banks and financial companies regarding the difference in policy adopted by them considering size of dividend and its impact in compare with the listed manufacturing companies.

1.2 Statement of the problem

In recent years, the over-subscription of ordinary shares in initial public offering showed that the people are diverting towards investing in shares, bonds rather than other traditional assets. It is also due to the high increase in the bullion price. Generally, people are investing their money in the common stocks. Some investors are being more rational towards the investment process. They are studying background, past history and performance of the organization, market demand of the stock, dividend policy undertaken by the organization etc. before investing their money. But still more investors are investing without knowing the basic concept and process of the investment. Most of the investors are not aware of the risk involved in investing on such securities. Investors should be aware of the

policies and decisions taken by the company management towards wealth or profit maximization (Chhetri:2010)

Different financial experts have introduces the Dividend payment models which present their view towards Dividend payment. Among them, MM model tells that Dividends are irrelevant to the value of the firm. It believes that earnings should be retained only for getting benefit from investment opportunities. If there is no investment opportunity, all the earnings should be distributed as dividend (Modigliani & Miller:1961)

James Walter had propounded relevant theory of dividend. He proposed a model for share valuation. According to him, the Dividend policy of the firm affects the value of the shares. His model supports that Dividends are relevant. He argues that the choice of Dividend polices almost always affect the value of an Enterprise. The Investment policy of a firm cannot be separated from its Dividend policies according to him both are interlinked which is just opposite to Modigliani and Miller approach. Walter's model shows clearly the importance of the relationship between the return on a firm's investment or its internal rate of return (r) and its cost of capital or the required rate of return (k) in determining the Dividend policy. As long as the internal rate greater than the cost of capital, the share price will be enhanced by retention and will vary inversely with dividend payment. In this way Walter's model's in also known as "Optimal Theory of Dividend" (Walter:1966)

Dividend policy is the decision to distribute the net income to shareholder or to retain or reinvest in the company. Common shareholders are considered as real owner of the company. So they look after the return on their shares. So dividend policy directly affects the view of the common shareholders towards the company. If company is distributing the dividend regularly, common stockholders will be

more positive towards the company. But if the company cannot make its shareholders satisfy, it will lose the belief from the common shareholders.

Different banks have adopted different policies and Dividends are paid in different forms such as cash dividend, stock dividend etc. Nowadays stock dividend is being more popular in Nepal especially in banking sector. But there is no rigid rule for Dividend payment because few Banks are generating profit and they are focusing toward reinvestment opportunities.

In general, the dividend policy will affect the stock price in market. If the dividend policy is shareholder oriented, then the market price of the stock will increase. It's because people want to invest in those stocks, which give more return. But some scholars and experts do not agree with this relationship of dividend and market price of stock. Some experts believe to have a positive relationship whereas others believe to have negative relationship.

Thus the controversy exists on impact of dividend policy on stock price.

- If there are no tax disadvantages associated with dividends and companies can issue stock at no cost to raise equity whenever needed, dividends do not matter, and dividend policy does not affect value.
- If dividends have a tax disadvantage, dividends are bad, and increasing dividends will reduce value
- If stockholders like dividends, or dividends operate as a signal of future prospects, dividends are good, and increasing dividends will increase value

Moreover; the study will be focused on the following problems regarding the subject chosen for the study. This study deals with the following issues;

- Does there exit the positive or negative relationship between dividend and stock price?
- What kind of dividend policies are following by the commercial banks of Nepal?
- Is there any consistency between dividend policies followed by commercial banks?
- Do the Nepalese investors take care about the dividend policies followed by the related companies before investing?

1.3 Objective of the study

There are so many dimensions to be considered in dividend theories, policies and practices and there are still many questions not answered clearly as to impact of dividend policy on market price of share. The following are the objectives of the study:

- To measure uniformity in DPS, EPS, MPS and DPR of the sample firms.
- To find the major factors affecting dividend policy of the firm.
- To identify the relationship between DPS and other financial indicators.
- To suggest recommendation.

1.4 Significance of the study

Due to excess liquidity and lack of investment opportunities in the capital market, nowadays people are very much interested and attracted to invest in shares for getting higher returns. When any new company issues (floats) shares through capital markets, very big congregation gathers to apply for owner's certificate. It reveals that people have expectation on higher return for investing in shares. So the dividend decision is one of the most important decisions of financial management. It is an effective tool (way) to attract new investors, maintain present investors and controlling position of the firm. In capital market, basically, the

return can be earned in the following two ways:

i) By means of dividend

ii) By capital gains i.e., increase in share price.

Having lack of adequate knowledge, the people are haphazardly investing in shares. It shows that there is an extreme necessity to establish clear conception about the return that yields from investing in securities.

In the Nepalese perspective, we find that there exist almost none of the companies adopting consistent dividend policy. There may be many reasons behind it. But there is not sufficient study conducted in this regard. So, I have made this humble attempt to contribute to this aspect. Therefore, considering all these facts, the study is undertaken which will help to meet deficiency of the literature relating to dividend decision and factors affecting the dividend policy. So the study of dividend policy is of considerable importance.

I believe that so many persons and parties such as shareholders, management of banks, financial institutions, general public (depositors, prospective customers, investors etc.) and other policy making bodies which are concerned with banking business will be benefited from this study. It is also believed that it will provide valuable inputs for future research scholars.

1.5 Organization of the Study

The whole study has been divided into five chapters concentrating over three main folds via-introductory framework, analytical framework and suggestive framework.

In chapter 1st deals with subject matters of the study consisting background of the study, introduction to selected sample companies, statement of problem, objective of the study, significance of the study limitation of the study and organization of

the study. The 2nd chapter deals with review of the different literature of the study field. Therefore it includes conceptual framework, theoretical review along with the review of major books, journals, previous research works and thesis reports on the subject matter.

The third chapter deals with research methodology and it includes research design, population and sample selection, sources of data, data collection procedure and tools for analysis of the study. 4th chapter deals with analysis and interpretation of collected data using appropriate financial and statistical tools. This chapter will illustrate the collected data into a systematic format. Similarly, analysis and interpretation of these data will also be included in this chapter.

The 5th chapter deals with summary of the entire study. Conclusions of the study will also be included in this chapter. As well as, possible and viable recommendations will also be presented in this chapter.

1.6 Limitations of the Study

The study focuses the sensitive part of the Bank which resultants the management a little bit hesitation to come up with open view regarding the Dividend policy and payment procedure. Therefore the study has been conducted on the basis of annual reports of selected banks, published and unpublished material and NRB publications. Therefore the strength of findings will largely depends upon the correctness of input information. Since the study has been conducted by developing assuming about various factors it has following limitations:

The study is based on secondary data like annual reports of the selected companies, reviews, journals, articles, published and unpublished thesis works and various related material from various websites. Hence, the study does not include primary data.

- All the data are based in fiscal year 2005/06 to 2009/10 for sample commercial banks.
- Among the different determinants of the market price of the stock only Cash dividend and earnings are taken for the analysis.
- Among the various aspect of dividend policy only market price of stock is taken as subject matter.
- Among the various sector only banking sector is considered.

Chapter-II

REVIEW OF LITERATURE

Review of literature is a way to discover what other researches in the area of problems has done and what has been left uncovered. The purpose of literature review is to find out what research studies have been conducted in one's chosen field of study and what remains to be done, what others have written about the topic, what theories advanced, what are others have written about the researchers, what are the areas of agreement add disagreement and whether there are any gaps that could be filled through this research.

Dividend decision of the firm is yet another crucial area of financial management. The important aspect of dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained in the firm. Retained earnings are the most significant internal sources of financing the growth of the firm. On the other hand, dividends may be considered desirable from shareholders' point of view as they tend to increase their wealth. Dividends constitute the use of the firm's funds (Pandey: 1997).

2.1 Conceptual framework

The concept of financial institution in Nepal was introduced when the first commercial bank of Nepal, Nepal Bank Ltd. was established in 1937 A.D. as a semi government organization in absence of central bank in the country. It was established under specific Banking Act.1936 having elementary functions of a commercial bank. Fifty-one percent of the paid up capital of Nepal Bank Ltd. is owned by the government and forty nine percent by the public. Because of the non-existence of a central bank in the country Nepal Bank Ltd. had to act as its own central bank and keep enough resources in hand for meeting emergencies (UNCTAD/GATT: 1980).

Most of the investors expect dividend to continue in each year as well as to receive price when they sell the stock. The expected final stock price includes the returns of the original investment plus a capital gain. If the stock is actually sold at price above its purchase price, the investor will receive a capital gain as such the shareholders expect an increase in market value of the common stock over time. At the same time, they also expect firm's earning in a form of dividend. So the shareholders may satisfy with dividend or capital gain. "Financial Manager is therefore concerned with the activities of corporation that affect the well being of stockholders. That well being can be partially measured by dividend received but a more accurate measure is the market value of stock (Western and Brigham:1980).

2.1.1 Introduction to Dividend

Dividend is a periodic payment made by a company to its shareholders. It is compensation to the shareholders for the use of and risk to their investment funds. Or in other words, it is that portion of the net earning divided by the company among the shareholders as a return for their money invested. When a company earns a profit, that money can be put to two uses: it can either be re-invested in the business (called retained earnings), or it can be paid to the shareholders of the company as a dividend. Paying dividends is not an expense; rather, it is the division of an asset among shareholders. Many companies retain a portion of their earnings and pay the remainder as a dividend. Publicly-traded companies usually pay dividends on a fixed schedule, but may declare a dividend at any time, sometimes called a special dividend to distinguish it from a regular one.

2.1.2 Dividend Payment Process

Dividends are normally paid quarterly. Dividends must be declared or vapproved by a company’s Board of Directors each time they are paid. There are four important dates to remember regarding dividends. The dividend payment procedure follows.

Declaration date

The declaration date is the day the Board of Directors announces its intention to pay a dividend. On this day, a liability is created and the company records that liability on its books; it now owes the money to the stockholders. On the declaration date, the Board will also announce a date of record and a payment date (Thapa and koirala:2008).

Ex-dividend date

The ex-dividend date is the day after which all shares bought and sold no longer come attached with the right to be paid the most recently declared dividend. This is an important date for any company that has many stockholders, including those that trade on exchanges, as it makes reconciliation of who is to be paid the dividend easier. Prior to this date, the stock is said to be cum dividend (with dividend): existing holders of the stock and anyone who buys it will receive the dividend, whereas any holders selling the stock lose their right to the dividend. On and after this date the stock becomes ex dividend: existing holders of the stock will receive the dividend even if they now sell the stock, whereas anyone who now buys the stock now will not receive the dividend. It is relatively common for a stock's price to decrease on the ex-dividend date by an amount roughly equal to the dividend paid. This reflects the decrease in the company's assets resulting from the declaration of the dividend. The company does not take any explicit action to adjust its stock price; in an efficient market, buyers and sellers will automatically price this in (Joshi:2005).

Holder of Record date

Shareholders who properly registered their ownership on or before the date of record will receive the dividend. Shareholders who are not registered as of this date will not receive the dividend. Registration in most countries is essentially

automatic for shares purchased before the ex-dividend date (Bajracharya and Bhattarai:2008).

Payment date

The payment date is the day when the dividend cheque will actually be mailed to the shareholders of a company or credited to brokerage accounts (Joshi:2005).

2.1.3 Forms of Dividend

Corporate firms choose to make the payment of dividends in view of its objectives, needs and policies. The firms may distribute the dividends in various forms. Some are briefly explained below;

Cash Dividend

Most companies pay dividends in cash. Sometimes cash dividend may be supplemented by a bonus issue (stock dividend). A company should have enough bank balance at the time of paying cash dividend; arrangement should be made to borrow funds. When the company follows a stable dividend policy, it should prepare a cash budget for the coming period to indicate the necessary funds which would be needed to meet the regular dividend payments of the company. It is relatively difficult to make cash planning in anticipation of dividend needs when an unstable policy is followed. The cash account and the reserves account of a company will be reduced when the cash dividend is paid. Thus, both the total assets and the net worth of the company are reduced when the cash dividend is distributed. The market price of the share drops in most cases by the amount of the cash dividend distributed (Bhattarai:2007).

Script Dividend

When company has been suffering from the cash problem but has earned profit, script dividend is paid (issued). Script is a form of promissory note promising to

pay the holder at specified later date. Under this type of dividend, company issues and distributes to shareholders transferable promissory notes which may be interest bearing or not (Clark:1990).

Stock Dividend

Stock dividend is a form of dividend out of two forms; cash and stock. In the stock dividend company distributes shares as dividend to the shareholders' and this dividend is distributed either form past retained earnings or from net profit earned in the respective year. The share price of stock dividend is fixed at market price at the time of dividend declaration. The declaration of stock dividend will increase the paid up share capital and reduce the retained earnings. Therefore, it involves making a transfer from the retained earnings amount to the other shareholders' equity accounts like common stock and additional paid-up capital (share premium or excess of par value) There are number of reasons why company declares stock dividend. The following are the reasons: to increase share capital and to provide tax benefit to the shareholders (Thapa:2006).

Receipts of stock dividend are not taxable income but cash dividend is a taxable income to conserve cash in the organization. A company having less liquidity pay stock dividend to conserve cash to provide psychological value to the shareholders to decrease the share price at taxable range. The share issued to shareholders as dividend is called stock dividend. This is method of paying dividend without reducing cash balance. The issue of stock dividend is also known as bonus shares. Payment of stock dividend increases the number of outstanding shares of the company. Simply, it is a recapitalization of the owner's equity portion, i.e. the reserves and surpluses and transfer a portion of retained earnings to the capital accounts (Thapa:2006).

Stock Split

Stock split is also a kind of stock dividend where company breaks (increase or decrease) shares through splitting (breaking) the par value of the share. Split takes place in two ways: Straight split, and Reverse split. Except in accounting treatment the stock dividend and stock split are very similar. A stock split however is usually reversed for occasion when a company wishes to achieve a substantial reduction in the market price of the shares. (Horne & J.C: 1993).

In stock split there is no change in the capital account: instead a large numbers of the shares of the common stock are issued. In two-for-one stock split, stockholders receive two shares for each one previously held. The book value per share is cut in a half and par or stated, value per share is similarly changed. Straight stock split: In the straight split company increases number of shares through a proportional reduction in the par value of stock. Straight split takes place to bring the market price in reasonable range (affordable by small investors) and to increase the total dividend without increasing dividend per share. With a stock split, the number of shares increases. Stock splits are similar to stock dividends. As a result of the stock split, the common stock, paid-in capital and retained earnings accounts remain unchanged. Shareholders' equity also stays the same; the only change is in the par value of the stock. Except in accounting treatment, the stock dividend and stock split are very similar. Reverse stock split: In the reverse stock split, company reduces number of shares outstanding through merging the par values of the stocks. This takes place to bring low priced shares up at desirable trading levels. Reverse stock split is the opposite of straight stock split where the par value increase but the common stock, retained earnings, additional paid-in capital remain unchanged (Horne & J.C: 1993).

Stock Re-purchase

Company repurchases its own stock as dividend decision. It is also said that stock repurchase is an alternative of cash dividend. Under this plan, company distributes cash to the shareholders buying back some of its own outstanding stock, thereby decreasing the number of shares, which would increase EPS and the stock price. Company repurchases its own stock due to number of reasons, such as; to bring change in the existing capital structure to increase value of stocks in the future to distribute temporary excess cash to manage excess liquidity (Bhattarai and Bajracharya:2008).

Property Dividend

If the declared dividend is provided in the form of property (assets) instead of cash, the dividend is said to be property dividend. This form of dividend may be followed when there are assets that are no longer necessary in operation of the business or in extra ordinary circumstances. Company's own products and securities of subsidiaries are the examples that have been paid as property dividend (Dahal:2010)

Bond Dividend

Bond dividend by its name is a dividend that is distributed to shareholders in form of a bond. In other words company declares dividend in form of its own bond with a view to avoid cash out flows. Though there are different forms of dividends, in general, the form of dividends popular in Nepal are cash dividend and stock dividend (Joshi: 2005).

2.1.4 Factors Affecting Dividend Policy

Many variables influence dividends, however. For example, a firm's cash flows and investment needs may be too volatile for it to set a very high regular dividend. Yet, it may desire a high dividend payout to distribute funds not necessary for

reinvestment. In such a case, the directors can set a relatively low regular dividend low enough that it can be maintained even in low profit years or in years when a considerable amount of reinvestment is needed – and supplement it with an extra dividend in years when excess funds are available.

Stability of earnings:

The nature of business has an important bearing on the dividend policy. Industrial units having stability of earnings may formulate a more consistent dividend policy than those having an uneven flow of incomes because they can predict easily their savings and earnings. Usually, enterprises dealing in necessities suffer less from oscillating earnings than those dealing in luxuries or fancy goods (Thapa and Koirala:2008)

Liquidity of Funds:

Availability of cash and sound financial position is also an important factor in dividend decisions. A dividend represents a cash outflow, the greater the funds and the liquidity of the firm the better the ability to pay dividend. The liquidity of a firm depends very much on the investment and financial decisions of the firm which in turn determines the rate of expansion and the manner of financing. If cash position is weak, stock dividend will be distributed and if cash position is good, company can distribute the cash dividend (Thapa and Koirala:2008).

Needs for Additional Capital:

Companies retain a part of their profits for strengthening their financial position. The income may be conserved for meeting the increased requirements of working capital or of future expansion. Small companies usually find difficulties in raising finance for their needs of increased working capital for expansion programs. They having no other alternative, use their ploughed back profits. Thus, such Companies

distribute dividend at low rates and retain a big part of profits (Bhattarai and Bajracharya: 2008).

Government and Taxation Policy:

The earnings capacity of the enterprise is widely affected by the change in fiscal, industrial, labor, control and other government policies. Sometimes government restricts the distribution of dividend beyond a certain percentage in a particular industry or in all spheres of business activity as was done in emergency. The dividend policy has to be modified or formulated accordingly in those enterprises.

High taxation reduces the earnings of he companies and consequently the rate of dividend is lowered down. Sometimes government levies dividend-tax of distribution of dividend beyond a certain limit. It also affects the capital formation. N India, dividends beyond 10 % of paid-up capital are subject to dividend tax at 7.5 % (Paudel et. al:2007).

Legal Requirements:

In deciding on the dividend, the directors take the legal requirements too into consideration. In order to protect the interests of creditors an outsider, the companies Act 1956 prescribes certain guidelines in respect of the distribution and payment of dividend. Moreover, a company is required to provide for depreciation on its fixed and tangible assets before declaring dividend on shares. It proposes that Dividend should not be distributed out of capita, in any case. Likewise, contractual obligation should also be fulfilled, for example, payment of dividend on preference shares in priority over ordinary dividend (Bhattarai:2002)

Past dividend Rates:

While formulating the Dividend Policy, the directors must keep in mind the dividend paid in past years. The current rate should be around the average past rat. If it has been abnormally increased the shares will be subjected to speculation. In a

new concern, the company should consider the dividend policy of the rival organization (Chhitri:2010).

Policy of Control:

Policy of control is another determining factor is so far as dividends are concerned. If the directors want to have control on company, they would not like to add new shareholders and therefore, declare a dividend at low rate. Because by adding new shareholders they fear dilution of control and diversion of policies and programs of the existing management. So they prefer to meet the needs through retained earning. If the directors do not bother about the control of affairs they will follow a liberal dividend policy. Thus control is an influencing factor in framing the dividend policy (Joshi:2005)

Repayments of Loan:

A company having loan indebtedness are vowed to a high rate of retention earnings, unless one other arrangements are made for the redemption of debt on maturity. It will naturally lower down the rate of dividend. Sometimes, the lenders (mostly institutional lenders) put restrictions on the dividend distribution still such time their loan is outstanding. Formal loan contracts generally provide a certain standard of liquidity and solvency to be maintained. Management is bound to hour such restrictions and to limit the rate of dividend payout (Paudel et.al:2007).

2.1.5 Theories of Dividend

1) Residual Theory of Dividend

According to one school of thought, the residual theory of dividends suggests that the dividend paid by a firm should be viewed as a residual amount left after all acceptable investment opportunities have been undertaken. Dividend policy can be viewed as one of a firm's investment decision. A firm that behaves in this manner is said to believe in the residual dividends. According to this theory, dividend

policy is a residue after investment whether or not a company pays dividends depends on the availability of investment opportunity (Dangol: 2006).

The starting point in this theory is that investors prefer to have the firm retain and reinvest earning, instead of paying dividends, if the return on reinvestment is higher than the opportunity cost of fund for the investors. The dividend under residual dividend policy equals the amount left over from earning after investment, no dividends are paid and new shares are sold to cover deficit for investment that is not covered. If there is not any investment opportunity then cent percent earning is distributed as dividend to the shareholders. Dividend is therefore merely a residue i.e. percent remaining after all equity investment needs arc fulfilled (Thapa and Koirala:2008).

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

2) Stability Theory of Dividend

Dividend stability refers to the consistency in stream of dividend. In other words, stability of dividend means regularity in paying dividend even though the amount of dividend may fluctuate from year to year. "Stability of dividends is considered

as a desirable policy by the management of most companies. Shareholders also generally favor of this policy and value stable dividends higher than the fluctuating ones. All Investment Opportunity EPS, DPS & Investment Earning Year other things being the same, stable dividend may have a positive impact on the market price of the share (Pandey:1995).

By stability, we mean maintaining the position of the firm's dividend payments in relation to a trend line, preferably one that is upward sloping. There are some reasons to believe that a stable dividend policy does lead to higher stock prices. First, investors are generally expected to value more highly dividends they are sure of receiving, since fluctuating dividends are riskier than stable ones. Accordingly, the same average amount of dividend received under a fluctuating dividend policy is likely to have a higher discount factor applied to it than is applied to dividends under a stable dividend policy. This means that the company with stable dividend policy will have a lower required rate of return or cost of equity capital than one whose dividend fluctuates. Second, many stockholders live on income received in the form of dividends. These stockholders are greatly inconvenienced by fluctuating dividends and they will pay a premium for a stock with a relatively assured minimum dollar dividend. Third, from the stand point of both the corporation and its stockholders is that, stability of dividend is desirable for the requirement of legal listing (Pandey:1995).

2.1.6 Dividend Policy

A stable dividend policy is a long term policy. It does not affect by variation in earning from year to year. When a firm constantly pays a fix amount of dividend and maintains it for all times to come regardless of fluctuations in the level of its earnings, it is called a stable dividend policy. The dividend will be regular. Stability of dividend means regularity in paying dividend even though the amount of dividend may fluctuate from year to year. By stability we maintaining a position

in relation to a dividend trend line, preferably one that is upward slopping. (Van Horne & J. C:2000).

The shareholders generally prefer stability or regularity of dividend because the company distributes a stable dividend over the year the market price of the share may be increased. It is suitable for those companies, which have got stable income. All other things being the same stable dividend may have a positive impact on the market price of the share. In other words, the term dividend stability refers to the consistency in the stream of dividends. There are three types of dividend stability which are given below.

Constant Dividend Per share

Under constant DPS, a fixed amount of dividend per share is distributed each financial year throughout some financial years. The dividend per share for every year is constant. Such as if ABC Company pays Rs.15 per share as dividend to the equity shareholders, the dividend per share for next year will also be Rs. 15 per share under the constant DPS scheme (Bhattarai & Bajracharya:2007)

Constant Payout Ratio

Under constant payout ratio companies pay dividend at constant rate of earning each year. Under this policy the payout ratio remains constant but the dividend fluctuates with earning fluctuations. The variability in dividend signals uncertainty of dividend in the future to the shareholders. Such as if ABC Company pays 20% dividend of total earnings to its shareholders, then the next year also the rate of dividend will be same, but DPS will vary according to the earnings of the Company (Thapa:2008)

Low Regular Dividend plus extra Dividend:

Dividends are usually settled on a cash basis, as a payment from the company to the customer. They can also take the form of shares in the company (either newly-created shares or existing shares bought in the market), and many companies offer dividend reinvestment plans, which automatically use the cash dividend to purchase additional shares for the shareholder (Thapa and Koirala:2008).

2.2 Review of Related Studies

2.2.1 Review of Major International studies.

Linter (1956) has conducted a study on *Behavior Aspect of Dividend Policy* in the context of American company. He investigated a partial adjustment model as he tested 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 periods. According to J. Linter, dividend is a function of earnings of that year, existing dividend rate, target payout ratio and speed of adjustment.

Followings were the basic objectives of his study.

- 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 existing most actively into dividends.

He concluded that a major portion of a firm's dividend could be expressed in the following manner.

$$DIV^* = P^* EPS \quad \text{---------- ---- (1)}$$

And

$$DIV_t - DIV_{t-1} = a+b\,(DIV_t * DIV_{t-1}) + e \quad \text{- ---------- (2)}$$

Adding

DIVt-1 on both sides of equation (2)

DIV = a+b DIV t * + (1-b) DIV t-1+e ---------- (3)

Where,

DIV *= Firm's desired payment

EPS_t = 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:

i) Firms generally think in terms of proportion of earnings to be paid out.

ii) In order to modify the pattern of dividend, investment opportunities, liquidity position, funds flows are not considered.

Firms generally have target pay out ratios in view while determining change in Divided rate or dividend per share. (Linter:1956, extracted from khatiwada: 2001).

Modigliani and Miller (1961) have provided on the topic of *Dividend policy growth and the valuation of the share* most comprehensive argument for the irrelevance of dividends. According to MM. Dividend policy of a firm is irrelevant, as it does not affect the wealth of the shareholders. They hold that the value of the Firm depends on the earning power of the firm's assets, or its investment policy. When investment decision of the firm is given, dividend decision split of earnings between dividends and retained earnings is of no significance in determining value of the firm- According to them, the effect of dividend payments on shareholders' wealth is exactly offset by other means of financing.

The MM approach is based on the following critical assumptions:

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

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

Step 1:

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

Symbolically,

$$Po = \frac{(D1 + P1)}{(1+Ke)}$$

Where,

P_O = Market price at the beginning or at the zero period

Ke = Cost of equity capital

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

P1 = Market price of share at the end of the period

Step 2:

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

$$Po = \frac{(nD1 + P1)}{(1+Ke)}$$

Where, n = Number of shares outstanding at the beginning period

Step 3:

If the firm's internal sources of financing are not sufficient to finance the new investment needs of the funds, in that case issuing the new share is the other alternative. Say Δn is the number of newly issued equity share at the end of year 1 at price P1 then,

$$nPo = \frac{[\{D1 + (n + D*n)\ P1\} - D*n\ P1]}{(1 + Ke)}$$

Step 4:

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

$DnP_1 = I - (E - n*D_1)$

Or $\Delta nP_1 = I + E+nD_1$

Where,

ΔnP_1 = Amount raised from the sale of shares to finance the project

I = Total amount of capital required for the project

E = Earning of the firm during the period

$(E\text{-}nD_1)$ = Retained Earnings

nD_1 = Total dividend paid

Step 5:

If value of nP1is substituted from equation of step 4 into equation of step 3 then,

$$nPo = \frac{[\{D_1 + (n + Dn)\, P_1\} - (I - E + nD_1)}{(1 + Ke)}$$

or,

$$nPo = \frac{D1 + (n+Dn)\, P1 - I + E - nD1}{(1 + Ke)}$$

$$nP \quad \frac{(n+Dn)\, P1 - I + E}{(1 + Ke)}$$

Step 6:

There is no any role of dividend (D1) in above equation. So Modigliani and Miller conclude that dividend policy is irrelevant and dividend policy has no effect on the share price.

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

without taxes" one critic satires; such a world is probably the moon or other planet in the universe.

Gordon (1962) has developed another popular model explicitly relating the market value of firm to dividend policy, which explains that dividend policy affects the value of shares even in a situation where the return on investment and required rate of return are equal. This model explains those investors are not indifferent between current dividend and retention of earnings with the prospects of future dividends, capital gain and both. The conclusion of the study is that investor gives more emphasis to the present dividend more than future capital gain. His argument stresses that an increase in dividend payout ratio leads to increase in the stock price for the reason that investors consider the dividend yield (P_1/P_0) is less risky that the expected capital gain.

Hence, investor's required rate of return increases as the amount of dividend decreases. This means there exist positive relationship between the amount of dividend and stock price.

His model is based on the following assumptions;

- The firm is an all-equity firm.
- The internal rate of return (R) and cost of capital (Ke) are constant.
- The growth rate of the company is constant and it must be less then Ke.
- The corporate taxes do not exist.

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

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

Where,

P = Price of the share

E = Earning per share

b = Retention ratio

1 – b = Percentage of earnings as dividends

E (1 – b) = Dividend per share

Ke = Capitalization rate or cost of capital

br = Growth rate (g)

According to this model, the following facts are revealed.

In the case of growth firm, share price tend to decline in correspondence with increase in payout ratio of decrease in retention ratio i.e. high dividend corresponds to earnings leads to decrease in share prices. Therefore, dividend and stock prices are negatively correlated in growth firm. But 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 each other in normal firm i.e. r = k firm. In the case of declining firm, share price tends to rise in corresponding with rise in dividend and stock price are positively correlated with each other in declining firm.

Friend and Puckett (1964) conducted the *"Study and the Relationship between Dividends and Stock prices"* by running regression analysis on the data of 110 firms from five industries in the years 1956 and 1958. These five industries were chemicals, electric utilities, electronics, food and steels. These industries were selected to permit a distinction made between the results for growth and non-growth industries and provide the basis for comparison with result by other

authors for earlier years. They also considered cyclical and non-cyclical industries that they covered. The study periods covered a boom year for the economy when stock prices, leveled off after rise (1956) and a somewhat depressed year for the economy when the stock prices however, rise strongly (1958).

They used dividends, retained earnings and price earnings ratio as independent variables in their regression model of price function. They used supply function and dividend function as well. In their dividend function earnings last year's dividends and price earnings ratio are independent variables. They quoted that the dividend supply function was developed by adding to the best types of relationship developed by Linter.

Symbolically, their price function and dividend supply function are presented below; Price Function:

$Pt = a + b*Dt + c*Rt + d\ (P/E)_{t-1}$

Where,

P_t = Per share price at time't'

D_t = Dividends at time't'

R_t = Retained earnings at time't'

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

Dividend Supply Function:

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

Where,

E_t = earning per share at time 't'

D_{t-1} = Last year Dividend

Their study based on the following assumptions;

- Price does not contain speculation components.
- Earnings fluctuation may not sum zero over the sample.

Their regression results based on the equation of $Pt = a + b*D_t + c*R_t$ showed the company's strong dividend and relatively weak retained earnings effects on three of the five industries, i.e. chemicals, foods and steels. Again they tested other regression equation by adding lagged earnings price ratio to the above equation and resulted the following equation, $Pt = a + b*D_t + c*R_t + d*(E/P)_{t-1}$. They found that more than 80% of the variation in stock prices could be explained by three independent variables. Dividend have predominant influence on stock prices in the same three industries out of five industries but they found the difference between the dividend and retained earnings coefficients are not quite so market as in the first set of regressions. They also found that the dividends and retained earnings coefficients are closed to each other for all industries in both years except for steels in 1956, and the correlation are higher again except for steel.

They also calculated dividend supply equation i.e. $D_t = e + f*E_t + g*D_{t-1} + h*(P/E)_{(t-1)}$ and they derived price.

Equation for industry group in 1958 in their derived price equation is seems that there was no significant changes from those obtained from the single equation approach as explained above. They argued that the stock prices more accurately the price earning ratio does not seem to have a significant effect on dividend payout. On the other hand, they noted that the retained earnings effect is increased relatively in three of the four cases tested.

Further, they argued that their results suggested price effects on dividend are probably not a serious source of bias in the customer derivation of dividend and retained earnings affects on stock prices. Though, such a bias might be marked. The disturbing effect of short run income movements is sufficiently great. Further,

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

Similarly, they tested the regression equation of $P_t = a + b\ D_t + c*R$ by using normalized earnings again. They obtained normalized retained earnings by subtracting dividends from normalized earnings. That normalization procedure was based on the period 1950-61. Again, they added the prior year's normalized earnings price variable and they compared the result. Comparing the result they found that there was significant role of normalized earnings. When they examine the later equation they found that the difference between dividends and retained earnings coefficients disappeared. Finally they excluded that management might be able to increase prices some what by raising dividends in foods and steels industries. Finally, Friend and Puckett concluded that it is possible that management might be able, at least in some measure to increase stock prices in non-growth industries by raising dividends and growth industries by greater retention, i.e. low dividends.

Walter (1966) study is also based on relevant theory. James E Walter by his article *"Dividend policy on common stock prices"* in journal of finance in 1957 advocated that the choice of appropriate dividend policy almost always affect the value of the enterprises i.e. share value. Walter's study is also based on some assumptions:

- The returns on the firm's investment(R) and the cost of capital (k_e) are constant.
- All earning are either distributed as dividend or re invested internally.
- The value of EPS and DPS remain unchanged.
- The firm has an infinite life.

  The value of the stock according to Walter can be calculated by the following equation:

  Where,

  P= market price of an equity share

  D= DPS

  E=EPS

  R= the rate of return on the firm's investment

  Ke= cost of capital

Walter's focus is in internal rate of return(R) and cost of capital (ke) in determining the dividend policy with these two variables: he had tried to conclude some decisions. Therefore he had expected there conditions probably exist:

Condition 1 (R>K)

When internal rate of return is greater then the cost of capital, it will be better to retain all net profits. R exceeding K shows the firm's better performances to earn more then the shareholders are paid in their reinvestment. The market value per share increase by decreasing the dividend in such situation. Moreover, the market value per share will be highest at zero dividends.

Condition 2(R<K)

When internal rate of return(R) is less then cost of capital (k), it advocates that the shareholders can earn a higher return by investing elsewhere. Increasing the dividend in this condition increases the market price per share. It is happened in the declining firm, generally. By distributing entire as dividend, the value of the

shares will be at optimum level. The dividend payout ratio of 100 would be the optimum dividend policy.

Condition 3(K=R)

If the internal rate of return equals to the cost of capital, the dividend payout dose not affect the market value fo the share. In this condition the market value of the share remains constant for the entire dividend payout ratio. This kind of firm is called normal firm. Therefore, there is no any optimum dividend policy for such firm.

Conclusion,

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

(R>K) = Dividends are negatively correlated with stock price.

(R<K) = Dividends are positively correlated with stock price.

(R=K) = Dividend is indifferent to variation in the market price of the share.

Van Horne and McDonald (1968) concluded a comprehensive study of 86 electric utility firms and 39 electronics and electric component industries by using cross sectional regression model in 1968 to know the combined effect of dividend policy and new equity financing decision on the market value of the firm's common stock. They employed two-regression model for electric utilities and one regression mode for electronics component industry.

First model was

$P_0/E_0 = a_0 + a_1 * (g) + a_2 (D_0/E_0) + a_3 * (lev) + u$

Where,

P_o/E_o = Closing market price in 1968 dividend by average EPS for 1967 and1968.

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

D_o/E_o= Dividend payout, measured by cash dividend in 1968 dividend by earnings in 1968.

Lev = Financial Risk, measured by interest charges divided by the difference of operating revenues and operating expenses.

U = Error term.

$P_0/E_0 = a_0 + a_1* (g) + a_2 (D_0/E_0) + a_3* (lev) + a_{4*}(Fa)+a_{5*}(Fb)+a_{6*}(Fc)+a_{7*}(Fd)+u$

Where, Fa, Fb, Fe, Fd are dummy variables corresponding to "new issue ratio" (NIR) sups A through D. It is noted that they had grouped the firms in five categories A, B, C, D, and E by NIR. For each firm the value of dummy variables presenting 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.

$P_0/E_0 = a_0 + a_1* (g) + a_2 (D_0/E_0) + a_3* (lev) + a_4* OR + u$

Where,

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

From their study they concluded that The market price of share was not affected by new equity financing in presence of cash dividend except for these in the

highest new issue group and it made new equity more costly from of financing than retention of earning, They also indicated that the payment of dividend through excessive equity financing reduces the market price of share.

2.2.2 Review of Research Works in Nepalese Perspective

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

M.K. Shrestha's Study (1981), here is very few articles published related to dividend in Nepal. The article by Dr. M. K. Shrestha published in 1981 about the *Dividend Performance of Some Public Enterprises* highlighted the following issues:

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

-The article points the irony about government biasness that government has not allowed banks to follow independent dividend policy and HMG is found to

Pressurize dividend payment in case of Nepal Bank Ltd. Regardless of profit. But it has allowed Rastriya Banijya Bank to be relieved obligation in spite of considerable profit.

Radhe S. Pradhan's Study (1992) *The study on stock market behavior in a small capital market* is a popular case study by Radhe S. Pradha. Pradhan's Study was based on the data collected from 17 enterprises from 1986 to 1990. The main objectives of the study are:

- To assess the stock market behaviour in Nepal.

- To examine the relationship of market equity, market value to book value, price earning arid dividend with: liquidity, profitability, leverage assets turnover and interest coverage.

Findings of his study, among others were as follows:

- Higher earning on stock leads larger of DPS.
- Stock with larger ratio of dividend per share to market price has lower leverage ratio.
- Positive relationship between the ratios of DPS to market price and interest coverage.
- Positive relationship between dividend payout and turnover ratios.
- Positive relationship between dividend payout and liquidity.
- Positive relationship between dividend payout and profitability.
- DPS and MPS are positively correlated,
- Liquidity and leverage ratios are more variable for the stock paying lower Dividends.
- Earnings, assets turnover, and interest coverage are more variable for the stock Paying higher dividends.

Review of Thesis

Gautam Rishi Raj (1998) in his thesis work intited *Dividend Policy in Commercial Banks, A Comparative Study of NGBL, NIBL and NABIL*

The main objectives of the study were;

- To identify the type of dividend policy followed by the banks
- To examine the impact of dividend on share price
- To identify the relationship between DPS and other financial indicators
- To know the uniformity among DPS, EPS and DPR of the sample companies with various analyses.

Following conclusions were drawn from the study;

- No clearly defined dividend policy is found followed by the sample companies.
- The market price of the share does not seem to be more or less dependent on EPS or DPS.
- No significant relationship between DPS and other financial indicators.
- No uniformity in EPS but prominent difference in DPS and DPR.

Bhattarai Bishnu Hari (2001) thesis paper *Dividend Decision and its Impact on Stock Valuation* done by Mr. Bhattarai.

The main objectives of his study are:

- To examine the influence of financial indicators on share price.
- To show the relationship between dividend per share and other financial indicators.
- To check the consistencies amongst DPS, EPS, D/P ratio etc. of the sample insurance company.
- To identify the dividend policy undertaken by each company and the appropriateness of the policy undertaken.

The major findings of his study are:

- There is positive relationship between cash flow and current profit and divided percentage of shares. The degree of relationship is almost perfect.
- There is no criterion to adopt payout ratio and it is observed that there is a negative relationship between payout ratio and valuation of shares.
- In aggregate, there is no stable dividend paid by the companies over the years. Some companies have steadily increased dividend. Such increase in dividend has a considerable impact on valuation of shares if there are

rational investors however this is yet to be realized by Nepalese company management.

- Inflation rate in recent year are decreasing and the market price of share are increasing. Nevertheless, the companies are not able .to give required rate of return to the investors.
- There was negative relationship between price of share and stockholders required rate of return. Shareholders have foregone opportunity income in hope of getting higher return, but companies have not been able to return even equal to risk free rate of return.

Khatiwada's study (2001) carried out a thesis work on *Impact of dividend and earning announced on shareholders return and stock price in Nepal* for the purpose he had used data from six joint venture banks of Nepal for the period of three

The main objectives of the study are:

- To analyze the impact of earning and dividend announcement on shareholder's return.
- To identify the correlation between return of individual securities and market return.
- To identify the quality of systematic risk and unsystematic risk.

The main findings of the study are:

- It is found the announcement of dividend and earning do not affect the shareholder's return in average.
- Other banks except Nepal SBI Bank having different dividend rates did not provide significant abnormal return to the shareholder's.
- Shareholder's realized positive abnormal return from half of the sample banks.

Rajbhandari, Prerana Laxmi (2001) has done thesis on the topic *Dividend Policy: A comparative Study between Banks and Insurance Companies.* The main objective of her study is to find out the appropriate dividend policies and practices in Nepal.

The specific objectives of her study were:

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

In her comparative, she concluded that the sample institutions have average earnings which can be considered satisfactory. However, no consistency in dividend payment is found in all the sample institutions i.e. NGBL, NIBL, KBL, NIC and EIC except NLGI which seems to be paying average DPS Rs. 20 every year.

On her study, she further concluded that none of the six sample institutions have a clearly defined and appropriate dividend policy. The dissimilarity and insignificant relationship between the financial indicators of all three banks and insurance companies' helps to conclude that they don't seem to follow and practice the dividend policy as established and developed in our context. However the analysis based on pooled data of dividend payment ratio between banks and insurance companies concluded that there is a kind of similarity in dividend payment decision of banks and insurance companies.

She further concluded on investors that they are not found to be investing their capital by studying the financial performance of the institutions but rather randomly without properly understanding the stock market. The institutions don't

seem to follow the optimal dividend policy of paying regular dividend as per the shareholder's expectation and interest. This would create (increase) uncertainty among the shareholders. But this does not mean that the institutions need to follow liberal dividend policy as the shareholders might even expect higher dividend as always. If the institutions are liberal on shareholders, it might make the company to raise extra capital in the near future.

The major findings of the study also makes conclusion that controversy existed in declaring dividend by the companies in the sense that the major factors like the earning and liquidity position of the firm have been neglected, ignored and disregarded which must have been considered the most.

Bhattarai manoj's study (2002) has done thesis on the topic *"Dividend policy and its impact on market price of stock"* He has done analysis of five years data from 1995 to 2000) taken from two commercial banks and two insurance companies. In his analysis simple and multiple regression equations are used.

The main objectives of the study are as under:

- To study the prevailing practices and effect made in dividend policy by the Nepalese firms with the help o simple firms.
- To find out the impact of dividend policy on market price of stock.
- To analyze if there is any uniformity among DPS, EPS, MPS and DPR in the sample firms.

Major finding of the study are as follows:

- There is no any consistency in dividend policy of the sample firms. It has indicated the need of dividend strategy as well as need of proper analysis of respective sectors of the firms.

- Most of Nepalese firms from the very past did not have profit planning and investing strategy which has imbalanced the whole position of the firms. It means there is no consistency even in the earnings of the firms.
- The MPS is affected by the financial position and dividend paid by the firms. In this regards, the MPS of the sample firms is seen to be fluctuating. It denotes that Nepalese investors are not treated fairly.
- The lack of financial knowledge and market inefficiency has affected the market price of the share in all the firms.

Dangol's study (2006) thesis paper entitled *Impact of Dividend Policy on Market Price of Stock* he used multiple regression model of sis independent variables. Besides this he also tried to highlight the relationship between stock price and other independent variables setting separate simples linear regression equations.

The following are the objective of this study:

- To find out the impact of dividend policy on market price of stock.
- To find out if there is any uniformity in DPS, EPS, MPS, DPR of the sample firms.
- To study the prevailing policies and practices regarding dividend in the Nepalese firms with reference to the sample firms.
- To find the major factors affecting dividend policy of the firm.

Major finding of his study are as follows:

- The relationship between dividend per share and stock price is positive.
- Dividends per share affect the stock price variedly in different sectors.
- Changing the dividend policy or dividend per share might help to increase the market price of the share.
- The relationship between stock price and retain earning per share is not prominent.

2.3 Research Gap

There have been many national and international studies in the field of dividend policy to date. All concepts and practices of foreign author's about the dividend practices are not used our Nepalese dividend policy. Those studies have tried to find out the relationship between dividend policy and market price of the stock. But as the Nepalese capital market is in the early stage of development, the conclusion made by the international studies may not be relevant in the Nepalese context.

So far the Nepalese studies are concerned some studies. Like Pradhan's, Manandhar's can be considered as landmark in the field of dividend policy. But many more changes appear in the market in short time period also. In Nepalese capital market also many changes ate seen in last few years. So it is necessary to carry out a fresh study related to dividend pattern of commercial banks of Nepal.

This is a distinct study form the previous studies in terms of sample, size and methodology used. The study has covered only five commercial banks. Latest five years data have been used to analyzed with due consideration of EPS, DPS, DPR and MPS. In order to assess the impact of dividend on market price of share available information from concerned banks were reviewed and analyzed. Regression analysis has been done taking market price of share (MPS) other variables like DPS, and EPS ratio. Trend analysis of MPS, DPS and EPS is also done which helps to predict the future of the banks.

Among the previous research works done in this topic, the samples were either mixture of banks and finance companies or that of insurance companies and manufacturing units. Here, the research work has been done with special reference to five leading commercial banks of Nepal. Descriptive analysis has incorporated trend analysis with picture demonstrations that the previous researchers have not done.

Chapter III

RESEARCH METHODOLIGY

Research can be defined as an organized, systematic, data- based, critical, scientific inquiry or investigation into a specific problem, undertaken with the objective of finding answers or solution to it. It is the systematic and objective analysis and recording of controlled observations that may lead to the developments of generalization principles or theories, resulting in prediction and possibility of ultimate control of events.

In fact, Research methodology is a way to systematically solve the research problems. It refers to the various sequential steps to be adopted by a researcher is studying a problem with certain objects in views (Kothari: 1978)

3.1 Research design

The research design is a mixture of descriptive, exploratory, and analytical. While analyzing the research, both parametric and non-parametric tools will be used wherever and whenever necessary. A research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Descriptive and analytical research designs have been used to this study. With the help of maintained research design the study evaluates the dividend policy structure of selected sample commercial banks as well as its impact on the market price of the stocks of the respective banks.

The research design is basically focused on analytical study. Ratio analysis, correlation and regression analysis have been done for analyzing the research. The research examines the relationship of EPS, MPS and DPS with respect to the dividend policy of the banks.

3.2 Population and Samples

The Population for this study comprises all the commercial bank of Nepal. there are 31 commercial banks in Nepal. Out of them 27 are listed in Nepal Stock Exchange (NEPSE) where as 4 are not listed in Nepal Stock Exchange (NEPSE). The share of listed commercial banks is traded actively in the share market. Since the study basically deals with the dividend policy and its impact on market price stock. The banks declaring are considered and others are set aside. The follows are the sample commercial banks selected from among the population**:**

1) NIC Bank Limited (NIC)

2) Machhapuchhre Bank Limited (MBL)

3) Nepal investment Bank Limited (NIBL)

4) Himalayan Bank limited (HBL)

5) Kumari Bank Limited (KBL)

It has been made a best effort to select the combination of five commercial banks which were not chosen for the research purpose before.

3.3 Methods of Data Collection

The data used in this study are from two sources, primary and secondary. However the prime focus has been given to the secondary data. The secondary data collected from, annual reports from Fiscal year 2005/06 to 2009/10, magazines and bulletins of the companies under study, relevant information and data from the publication of SEBON, NEPSE, NRB, and web pages of the selected companies, various newspapers, previous studies, thesis and dissertation related to this field etc. Beside that the indirect and informal talks, interviews with some professors, teachers and persons of related field etc. have also been made.

3.4 Data Analysis Tools

For the purpose of analysis, two tools or techniques are used. They are as following:

Financial tools

Statistical tools

3.4.1 Financial Tools:

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

i) Earning Per Share (EPS)

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

Symbolically,

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

ii) Dividend per Share (DPS)

The earning distributed to the shareholders out of EPS is known as DPS. It also affects the market price of stock. If EPS is greater, DPS will be greater. It is

calculated by dividing total dividend to equity shareholders by the total number of the equity shares.

Symbolically,

$$\text{DPS} = \frac{\text{Total Dividend to ordinary shareholders}}{\text{No of common stock outstanding}}$$

iii) Dividend Payout Ratio (DPR)

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

Symbolically,

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

3.4.2 Statistical tools

Various statistical tools are used in this study to estimate the relationship between two or more than two variables.

i) Arithmetic Mean:

The sum of all observations divided by number of observation is called arithmetic mean or simple average in equation:

$$\overline{X} = \frac{X_1+X_2+X_3+.....X_n}{n} \quad \text{Or,} \quad \overline{X} = \frac{\sum^{n} Xt}{n}$$

Where,

X = Arithmetic mean, $X_1+X_2+X_3…….X_n$= Set of observations

ii) Standard Deviations (S.D.)

Standard deviation was first suggested by Karl Pearson in 1893 A.D. as a measure of dispersion. It is usually denoted by sigma (σ). The measurement of scatterness of the data of figure in a series about an average is known as dispersion. The standard deviation measures the absolute dispersion. The greater amount of dispersion reflects the high standard deviation. A small standard deviation means a high degree of uniformity of observation as well as homogeneity of a series and vice-versa.

iii) Coefficient of Variation (CV)

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

Symbolically,

$$\text{Coefficient of variation (CV)} = \frac{\sigma}{X}$$

The coefficient of variation is the relative measure and is independent of units. The coefficient of variation is applicable for the comparisons of variability of two or more distributions. The greater the value of the coefficient of variation, the less will be the uniformity (or consistency, stability, etc.) and the smaller the value of coefficient of variation, the more will be the uniformity (or less will be the variability).

iv) Correlation and Regression:-

Correlation analysis is the statistical tool that is used to describe the degree to which one variable is linearly related to another. It is an analysis of the covariance between two or more variables. Two variables are said to be correlated. If the change in the value of one variables appears to be correlated, If the change in the value of one variable appear to be related or linked with the change in other variable. The coefficient of correlation measures the degree of relationship between the two sets of figures. It is the analysis of covariance between two or more variables that deals to determine the degree of relationship between the variables. The correlation analysis enables one in determining the degree and direction of relationship between two variables; however it does not tell us anything about the causes and effect relationship.

Regression analysis was first developed by Sir F. Galten which is one of the most powerful tools of statistics. It is concerned with the study of relationship between one variable called the explained or dependent variable and one or more other variable called independent variable. The technique of regression analysis is used to determine the statistical relationship between two or more variables and to make prediction of one variable on the basis of others (Sharma and Chaudhary, 2002).

There are two types of regression analysis. Simple regression analysis determines the relationship between one variable called the dependent variable and the other variable called independent variable. Multiple regression analysis is concern with the study of relationship between more then two variables.

$$r_{xy} = \frac{N * \Sigma XY - \Sigma X * \Sigma Y}{\{N (\Sigma X)^2 - \Sigma X^2 - N (\Sigma Y)^2 - \Sigma Y^2\}^{\wedge (1/2)}}$$

Where, r_{xy} is the correlation coefficient between two variables X and Y.

'r' lies always between +1 and -1

When ‘r’= +1, there is perfect positive correlation.

When ‘r’= -1, there is perfect negative correlation.

When ‘r’ = 0, there is no correlation.

When ‘r’ lies between 0.7 to 0.999 (or -0.7 to -0.999) there is high degree of positive or negative correlation.

When ‘r’ lies between 0.5 and 0.699, there is a moderate degree of correlation.

When ‘r’ is less than 0.5, there is low degree of correlation.

IV) T- Test

T-test, commonly known as Student’s T-Distribution, is used when sample size is equal to or less than 30, the parent population from which the sample is drawn is normal, the population standard deviation is unknown. In order to test the significance of an observed sample correlation coefficient, the following procedure has been applied.

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

Where, t = test of hypothesis, r = simple correlation coefficient and N = number of observation

Chapter IV

DATA PRESENTATION AND ANALYSIS

The main purpose of analyzing the data is to change it from an unprocessed form to an understandable presentation. The analysis of data consists of organizing, tabulating, and performing statistical analysis. This chapter consists of presentation and analysis of data which is collected from different sources. The data is mainly focused on the capital adequacy position and its impact on the performance of the sample banks. To obtain best result, the data and information have been analyzed with the measures of different financial and analytical tools by using appropriate tables, graphs, formulae, hypothesis and other tools.

Presentation of Data

The collected data and information are presented in this section. Various tables, charts and graphs are used to best present the data. The data and information has been presented in most understandable format. Dividend is a periodic payment made by a company to its shareholders. It is compensation to the shareholders for the use of and risk to their investment funds. Or in other words, it is that portion of the net earning divided by the company among the shareholders as a return for their money invested. For the study of dividend policy of commercial banks in Nepal, 5 commercial banks are selected as sample banks. From the selected sample banks, data related to dividend policy are collected and presented as well as analyzed in this chapter.

4.1 Analysis of Financial Indicators and Variables

4.1.1 Earning Per Share (EPS)

Normally the performance and achievement of business organizations are measured in terms of earning capacity to generate earning. Higher earning show higher strength while lower earning shows weaknesses of business organization. So higher the better the position is seen in stock market.

Table 4.1

Analysis of Earning Per Share (EPS)

YEAR	NIC	MBL	NIBL	HBL	KBL
2005/06	16.1	18.14	59.35	59.24	16.59
2006/07	24.01	9.02	62.57	60.66	22.7
2007/08	25.75	10.35	57.87	62.74	16.35
2008/09	27.83	8.33	37.42	61.90	22.04
2009/10	34.3	4.96	52.55	36.18	24.24
Average	25.4	10.28	53.95	55.37	20.38
SD	5.88	4.59	8.88	11.79	3.27
CV (%)	23.15	44.65	16.46	21.33	16.05

(Source: Annual report of sample banks)

The above comparative table 4.1 shows that the EPS of the five commercial banks selected as the samples for the period covering from the fiscal year 2005/06 to 2009/10. NIC has highest EPS Rs. 34.3 In the year 2009/10 and lowest EPS Rs. 16.1 in the year 2005/06. Similarly, MBL has highest EPS Rs. 18.14 in the year 2005/06 and lowest EPS of Rs. 4.59 in the year 2009/10. The EPS of NIBL fluctuates from lowest of Rs. 37.42 in the year 2008/09 to highest Rs. 62.57 in the year 2006/07. HBL has highest EPS of Rs. 62.72 in the year 2007/08 and the

lowest EPS of Rs. 31.80 in the year 2009/10. And, KBL has the highest EPS of Rs. 24.24 in the year 2009/10 and lowest EPS of Rs. 16.35 in the year 2007/08.

HBL has the highest EPS of all other sample banks throughout the study period. On the other hand MBL and KBL have the lower EPS in comparison to other sample banks. EPS of NIC is lowest of all sample banks in the first year i.e. Rs. 16.1 where as rest of the years MBL has the lowest EPS i.e. Rs. 9.02, Rs. 10.35, Rs. 8.33 and Rs. 4.96 in the fiscal year 2006/07, 2007/08, 2008/09 and 2009/10 respectively in the comparison to that other sample banks.

HBL has the highest mean EPS of Rs. 55.27 and MBL has the lowest mean EPS of Rs. 10.28. NIBL, NIC and KBL have EPS of Rs. 53.95, Rs. 25.4 and Rs. 20.38 respectively. This indicates the strong earning position of HBL and week earning position of MBL among the sample banks throughout the study period.

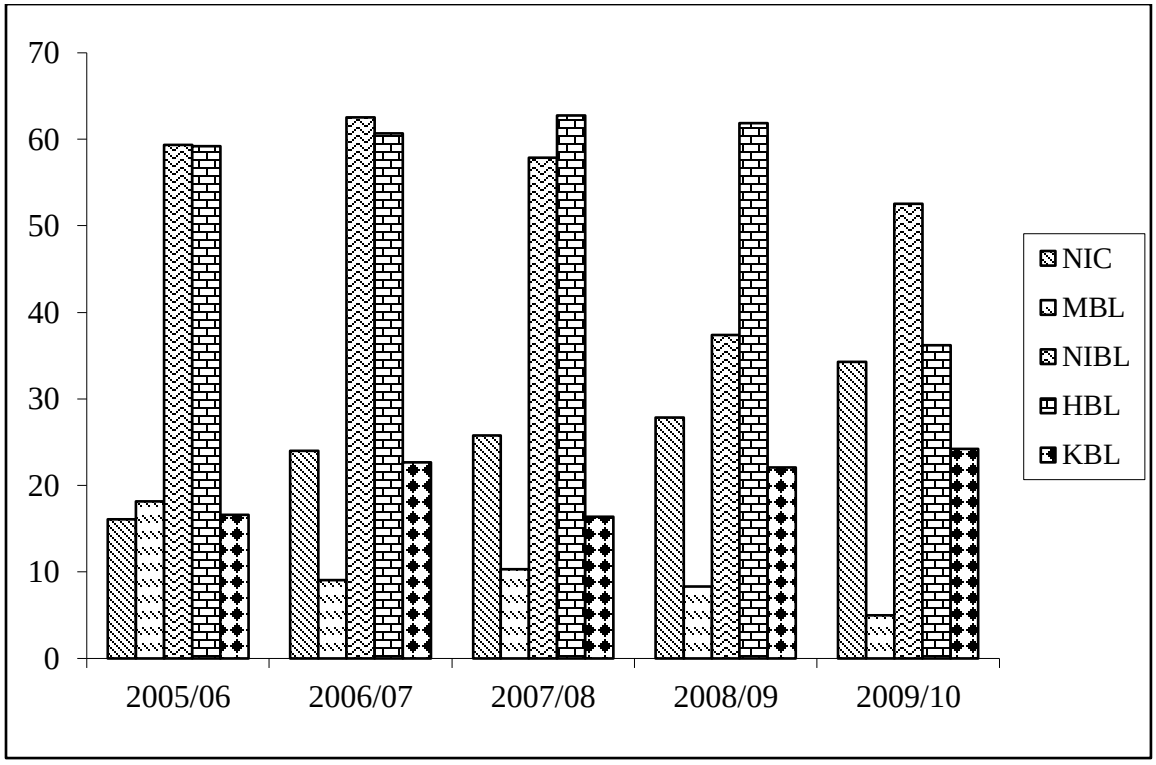
HBL has highest standard deviation of 11.795 in comparison to that of the other sample banks. KBL has lowest standard deviation of 3.27 from among five commercial banks. Similarly NIC, MBL and NIBL have standard deviation of 5.88, 4.59 and 8.88 respectively.

The analysis of CV indicates MBL has the highest CV of 44.65% and KBL has lowest CV of 16.05% which indicates that MBL has highest fluctuation in its EPS and KBL has lowest fluctuation in its EPS in comparison to that of all other sample banks. NIC, NIBL and HBL have 23.15%, 16.46% and 21.33% respectively.

The trend of EPS indicates no consistency throughout the study period. The EPS of NIC has increasing trend for the five year period of the study. Similarly, the trend of EPS of MBL, NIBL, HBL and KBL also fluctuating trend.

Figure 4.1

Analysis of EPS



4.1.2 Dividend per Share (DPS)

Dividend per share (DPS) is that amount, which is paid to common shareholders on a per share basis. DPS shows what exactly do the ordinary shareholders receive. It is calculated by dividing the dividend provided to equity shareholders by the total number of equity shares.

The below comparative table 4.2 shows that the DPS of the five sample commercial banks for the period of five fiscal year covering from 2005/06 to 2009/10.

Table 4.2

Dividend per share (DPS)

YEAR	NIC	MBL	NIBL	HBL	KBL
2005/06	0.53	0.79	20	30	1.05
2006/07	1.05	0	5	15	1.05
2007/08	1.05	0	7.5	25	0.53
2008/09	0.79	1.05	20	12	0.55
2009/10	26.32	0	25	11.84	12
Average	5.95	0.37	15.5	18.77	3.04
SD	10.19	0.46	7.81	7.39	4.49
CV (%)	171.26	124.3	50.39	39.37	147.7

(Source: Annual report of sample Banks)

NIC has the highest DPS of Rs. 26.32 in the year 2009/10 and lowest of Rs. 0.53 in the year 2005/06. Similarly, MBL has highest DPS of Rs. 1.05 in the year 2008/09 and it has not any DPS in the year 2006/07, 2008/09 and 2009/10. The DPS of NIBL has the highest of from Rs. 25 in the year 2009/10 to lowest of Rs. 5 in the year 2006/07. HBL has highest DPS of Rs. 30 in the year 2005/06 and the lowest DPS of Rs. 11.84 in the year 2009/10. And similarly, KBL has the highest DPS of Rs. 12 in the year 2009/10 and lowest DPS of Rs. 0.53 in the year 2008/09. HBL has distributed in average more then Rs. 18 of its earning to its shareholders throughout the study period. In comparison of other sample banks, HBL has maintained higher DPS for all the sample period expect in 2008/09 and 2009/10. On the other hand MBL has not distributes any dividend to its shareholders in some year. NIC, NIBL and KBL have distributes some of its earning to its shareholders throughout the study period.

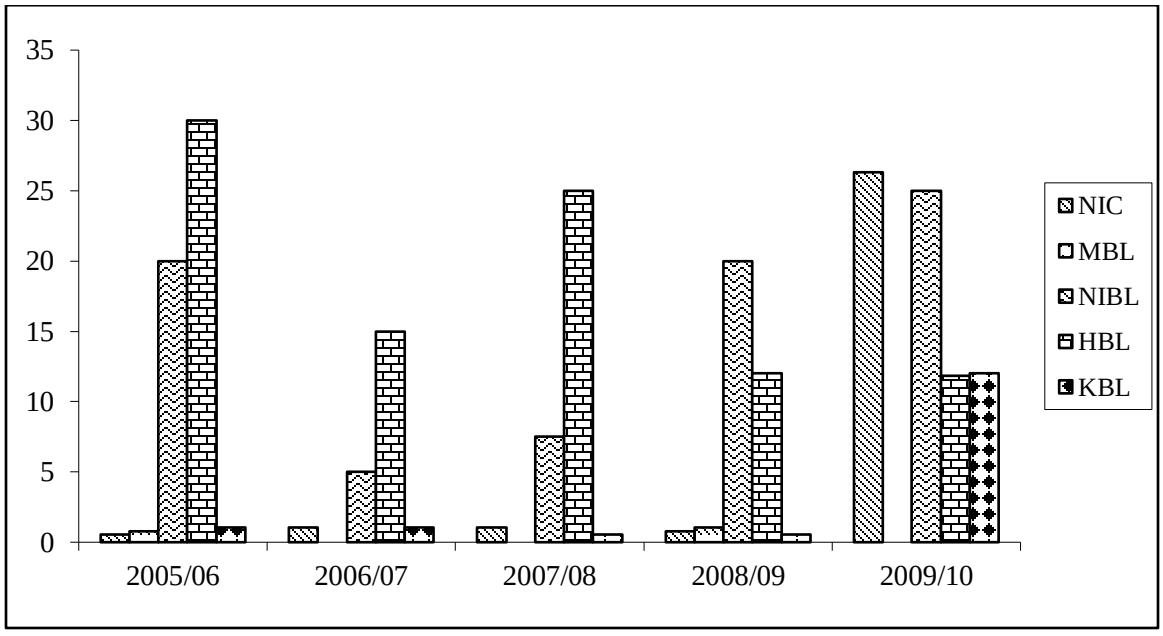
HBL has the highest mean DPS of Rs. 18.77 and MBL has the lowest mean DPS of Rs. 0.37 NIC, NIBL and KBL have mean DPS of Rs. 5.95, Rs. 15.5 and Rs. 3.04 respectively. This indicates the strong DPS position of HBL and weak DPS position of MBL among the sample banks throughout the study period.

NIC has highest standard deviation of 10.19 in comparison to that of the other sample banks. MBL has the lowest standard deviation of 0.46 from among five commercial banks. Similarly NIBL, HBL and KBL have standard deviation of 7.81, 7.39 and 4.49 respectively.

The analysis of CV indicates NIC has the highest CV of 171.26% and HBL has lowest CV of 39.37% which indicates that NIC has highest fluctuation in its DPS and HBL has lowest fluctuation in its DPS in comparison to that of all other sample banks. MBL, NIBL and KBL have 124.3%, 50.39% and 147.7% respectively. The trend of DPS indicates no consistency throughout the study period.

Figure 4.2

Analysis of DPS



4.1.3 Market Price per Share (MPS)

In this analysis MPS is calculated by taking the average of the highest and the lowest market price of NEPSE In The market price per share depicts the perception of the market relating to the performance of a company.

The below table 4.3 shows that the MPS of the five sample commercial banks for the period of five fiscal year starting from 2005/06 to 2009/10. It shows that MPS of the sample banks is in increasing trend up to year 2007/08 there after is in decreasing trend.

Table 4.3

Analysis of market price of share (MPS)

YEAR	NIC	MBL	NIBL	HBL	KBC
2005/06	496	320	1260	1100	443
2006/07	950	620	1729	1740	830
2007/08	1284	1285	2450	1980	1005
2008/09	1126	420	1388	1760	700
2009/10	626	282	705	816	468
Average	889.2	585.4	1506.4	1479.2	689.2
SD	296.48	368.9	575.66	443.01	214.11
CV (%)	33.34	63.02	38.21	29.95	31.10

(Source: Annual report of sample banks)

NIC has highest MPS of Rs. 1284 in the year 2007/08 and lowest MPS of Rs. 496 in the year 2005/06. Similarly, MBL has highest MPS Rs. 1285 in the year 2007/08 and lowest MPS Rs. 282 in the year 2009/10. The MPS of NIBL fluctuates lowest from Rs. 705 in the year 2009/10 to highest of Rs. 2450 in the

year 2007/08. HBL has highest MPS of Rs. 1980 in the year 2007/08 and the lowest MPS of Rs. 816 in the year 2009/10. And similarly, KBL has the highest MPS of Rs. 1005 in the year 2007/08 and lowest MPS of Rs. 443 in the year 2005/06.

NIBL has the highest MPS of all other sample banks upto first three years of the study period and it has decline On the other hand NIC, MBL and KBL have the lower MPS in comparison to NIBL and HBL. MPS of MBL is lower then other sample.

NIBL has the highest mean MPS of Rs. 1506.4 and MBL has the lowest mean MPS of Rs. 585.4. NIC, HBL and KBL have mean MPS of Rs. 889.2, Rs. 1479.2 and Rs. 689.2 respectively. This indicates the strong market position of NIBL and week market position of MBL among the sample banks throughout the study period.

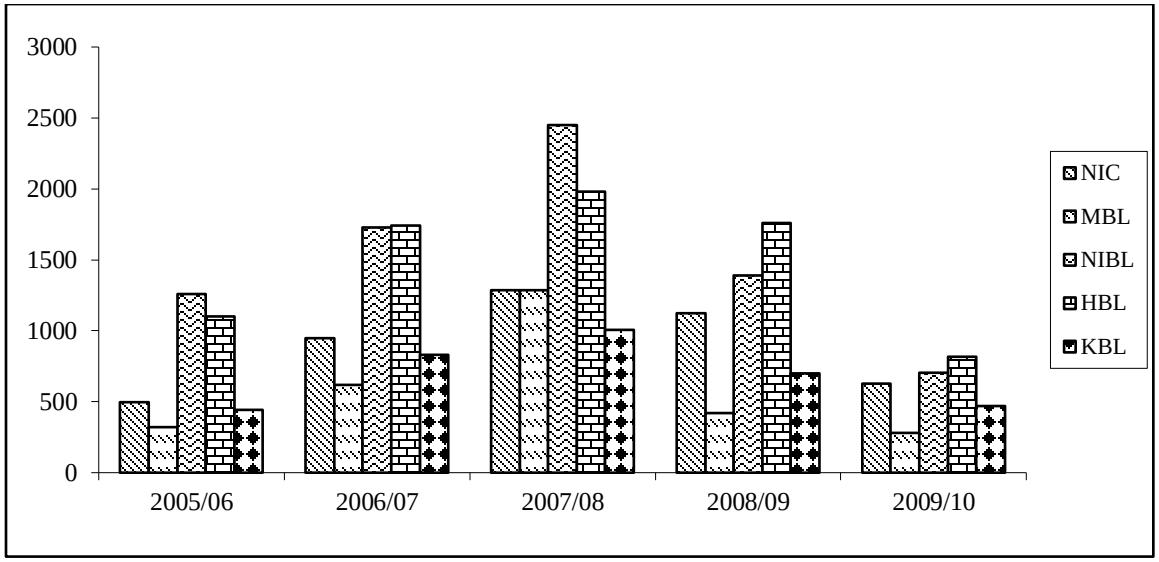
NIBL has highest standard deviation of 575.66 in comparison to the other sample banks. KBL has lowest standard deviation of 214.11 from among five commercial banks. Similarly NIC, MBL and HBL have standard deviation of 296.48, 368.9 and 443.01 respectively.

The analysis of CV indicates MBL has the highest CV of 63.02% and HBL has lowest CV of 29.95% which indicates that MBL has highest fluctuation in its MPS and HBL has lowest fluctuation in its MPS in comparison of all other sample banks. NIC, NIBL and KBL have 33.34%, 38.21% and 31.1% respectively

The trend of MPS indicates no consistency throughout the study period. The MPS of all sample banks have increasing trend for the three year period of the study. After that MPS of sample banks have declining.

Figure 4.3

Analyses of MPS



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4.1.4 Dividend Payout Ratio (DPR)

Dividend payout ratio measures the percentage of dividend paid out of the net profit after tax. It also clears about the retained earning. Since net profit is composed of dividend and retained earning only. A higher dividend payout ratio attracts the shareholders and consequently increases the market price of share. The dividend payout ratio of both banks is presented in the following.

The below comparative table 4.4 shows the DPR of the five sample commercial banks for the period of five fiscal year covering from 2005/06 to 2009/10.

Table 4.4

Analysis of Dividend payout ratio (DPR)

YEAR	NIC	MBL	NIBL	HBL	KBL
2005/06	3.29	4.22	33.7	50.64	6.33
2006/07	4.37	0	8	24.73	4.63
2007/08	4.08	10.15	12.96	39.85	3.24
2008/09	2.84	0	53.45	19.39	2.5
2009/10	76.74	0	47.57	37.23	49.5
Mean	18.26	2.87	31.14	34.37	13.24
SD	29.24	4	18.11	11.14	18.18
CV (%)	160.13	139.37	58.16	32.41	137.3

(Source: Annual report of respective bank)

NIC has the highest DPR of 76.74% in the year 2009/10 and lowest DPR of 2.84% in the year 2008/09. Similarly, MBL has highest DPR of 10.15% in the year 2007/08 and it has not paid any dividend in the year 2006/07, 2008/09 and 2009/10. The DPR of NIBL has the highest from 53.45% in the year 2008/09 to lowest 8% in the year 2006/07. HBL has highest DPR of 50.64% in the year 2005/06 and the lowest DPR of 19.39% in the year 2008/09. And similarly KBL has the highest DPR of 49.5% in the year 2009/10 and lowest DPR of 2.5% in the year 2008/09.

HBL has the highest DPR of all other sample banks throughout the study period. Except in the year 2008/09 and 2009/10. On the other hand MBL have lowest DPR in comparison to other sample banks. MBL has not distributed any dividend to the shareholders in the year 2006/07, 2008/09 and 2009/10 respectively.

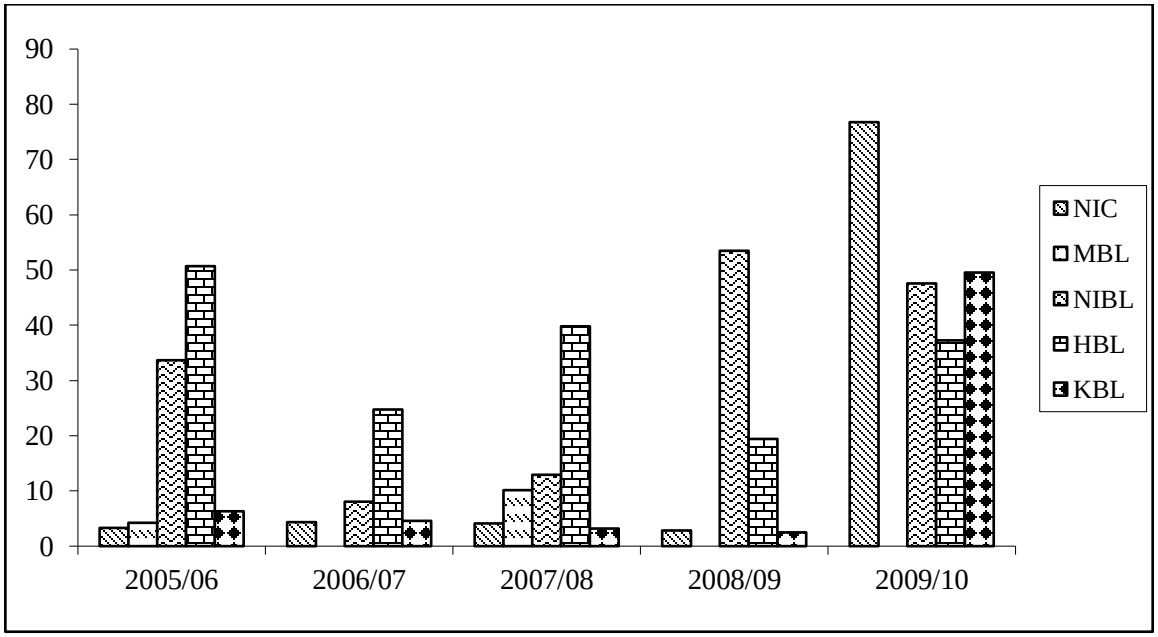
HBL has the highest mean DPR of 34.37% and MBL has the lowest mean DPR of 2.87%, NIC, NIBL and KBL have mean DPR of 1.97%, 7.99% And 0.71% respectively. This indicates the strong distribution position of HBL and weak distribution position of MBL among the sample banks throughout the study period.

NIC has highest standard deviation of 29.24 in comparison to the other sample banks. MBL has the lowest standard deviation of 4 from among five commercial banks. Similarly NIBL, HBL and KBL have standard deviation of 18.11, 11.14 and 18.18 respectively.

The analysis of CV indicates NIC has the highest CV of 160.13% and HBL has lowest CV of 32.41% which indicates that NIC has highest fluctuation in its DPR and HBL has lowest fluctuation in its DPR in comparison of all other sample banks. MBL, NIBL and KBL have 139.31%, 58.16% and 137.3% respectively.

Figure 4.4

Analysis of DPR



4.2 Analysis of Statistical Indicators and Variables

4.2.1 Correlation Analysis

The correlation analysis is a technique used to measure the closeness of the relationship between the variables. It helps us in determining the degree of relationship between two or more variables. It describes not only the magnitude of correlation but also its direction. The coefficient of correlation is a number which indicates to what extent two variables are related with each other. The correlation coefficient shows the relationship between two variables. Its value ranges from -l for perfect negative correlation up to +1 for perfect positive correlation. Here we have calculated the relationship between EPS and MPS, MPS and DPS and EPS and DPS.

4.2.1.1 Correlation between DPS and MPS

Table 4.5

Correlation coefficient between DPS and MPS

Banks	r	r^2	P.E.	Relationship	Significant/ Insignificant
NIC	-0.449	0.202	0.241	Negative	Insignificant
MBL	0.621	0.386	0.185	Positive	Insignificant
NIBL	-0.852	0.726	0.083	Negative	significant
HBL	0.035	0.001	0.301	Positive	Insignificant
KBL	-0.539	0.291	0.214	Negative	Insignificant

(Source: Appendix)

The above table 4.5 explains the relationship between dividend of last year DPS $_{(t-1)}$ and the current MPS of the sample banks. The coefficient of correlation between

$DPS_{(t-1)}$ and MPS of NIC is -0.449, which shows there is low degree of negative correlation between $DPS_{(t-1)}$ and MPS of NIC. And It's coefficient of determination is 0.202 which means, MPS is affected by DPS only by 20.2% and the rest 79.8% is affected by other unknown variables. Since r<6PE, the value of r is not significant.

Likewise, the coefficient of correlation between $DPS_{(t-1)}$ and MPS of MBL is 0.621, which shows there is positive correlation between $DPS_{(t-1)}$ and MPS of MBL. And it's coefficient of determination is 0.386 which means MPS is affected by DPS only 38.6% and the rest 61.4% is affected by other unknown variables. Since r<6PE, the value of r is not significant.

In the same way, coefficient of correlation between $DPS_{(t-1)}$ and MPS of NIBL is -0.852, which shows there is High degree of negative correlation between $DPS_{(t-1)}$ and MPS of NIBL. And it's coefficient of determination is 0.726 it means, MPS is affected by DPS only 72.6% and the rest 27.4% is affected by other unknown variables. Since r<6PE, the value of r is not significant.

The coefficient of correlation between $DPS_{(t-1)}$ and MPS of HBL is 0.035, which shows there is low degree of positive correlation between $DPS_{(t-1)}$ and MPS of HBL. And it's coefficient of determination is 0.001 means, MPS is affected by DPS only by 0.1% and the rest 99.9% is affected by other unknown variables. Since r<6PE, the value of r is not significant.

The coefficient of correlation between $DPS_{(t-1)}$ and MPS of KBL is -0.539, which shows there is high degree of negative correlation between $DPS_{(t-1)}$ and MPS of KBL. And it's coefficient of determination is 0.291 it means, MPS is affected by DPS only 29.1% and the rest 70.9% is affected by other unknown variables. Since r<6PE, the value of r is not significant

From the analysis of above table it can be conclude that MPS of the all sample banks is not affected by the last dividend $DPS_{(t-1)}$ except then NIBL. That means

there is no high significant relationship between the MPS and Last Dividend of the sample commercial banks.

4.2.1.2 Regression Analysis between DPS and MPS

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

$Y = a + bX$

$MPS_{NIC} = -10846.44 + (-13.1 \times DPS_{NIC})$

$MPS_{MBL} = 293291.25 + 500.01 \times DPS_{MBL}$

$MPS_{NIBL} = -93140.71 + (-62.83 \times DPS_{NIBL})$

$MPS_{HBL} = 4585.52 + 2.1 \times DPS_{HBL}$

$MPS_{KBL} = -17043.92 + (-25.73 \times DPS_{KBL})$

Table 4.6

Regression analysis between DPS and MPS

Banks	No. of Obsv. (n)	Constant (a)	Regression Coefficient (b)	T-value
NIC	5	-10846.44	-13.1	0.871
MBL	5	293291.25	500.01	1.1914
NIBL	5	-93140.71	-62.83	5.386
HBL	5	4585.52	2.1	0.0607
KBL	5	-17043.92	-25.73	1.317

(Source: Appendix I)

The Table 4.6 depicts the major output of simple regression analysis of average market price per share (MPS) on dividend per share (DPS) of the sample banks.

As far as the regression of MPS and DPS is concerned, the regression coefficient of NIC, MBL, NIBL, HBL and KBL are -13.1, 500.01, -62.83, 2.1 and -25.73 respectively. It indicates that a one-rupee increase in DPS leads to an average of Rs. 13.1 decrease in MPS of NIC, Rs.500.01 increase in MPS of MBL, Rs. 62.83 decrease in MPS of NIBL, Rs. 2.1 increase in MPS of HBL and Rs. 25.73 decrease if one rupee increase in DPS of KBL. If the other variable remain constant. The test of t-statistics aid to conclude that in NIC the relationship between MPS and DPS is insignificant, since the calculated value of t (0.871) is lower than tabulated value of t (3.182). In MBL the relationship between MPS and DPS is insignificant as the calculated value of t (1.1914) is lower than tabulated value of t (3.182), in NIBL the result is significant, since the calculated t-value (5.386) is lower than the tabulated t-value (3.182), in HBL the result is also insignificant, since the calculated t-value (0.0607) is lower than the tabulated t-value (3.182) and in KBL the results are also insignificant, since the calculated t-value (1.317) is lower than the tabulated t-value (3.182) at 5% level of significance.

4.2.1.3 Correlation between EPS and MPS

The below table 4.7 explains the relationship between earning per Share of last year $EPS_{(t-1)}$ and Market price per Share of the sample commercial banks.

Table 4.7

Correlation coefficient between EPS and MPS

Banks	r	r^2	P.E.	Relationship	Significant/ Insignificant
NIC	0.222	0.0493	0.2868	Positive	Insignificant
MBL	0.036	0.002	0.6732	Negative	Insignificant
NIBL	0.288	0.0829	0.277	Positive	Insignificant
HBL	0.807	0.6512	0.105	Positive	Significant
KBL	0.2425	0.0588	0.2839	negative	Insignificant

(Source: Appendix I)

The coefficient of correlation between $EPS_{(t-1)}$ and MPS of NIC is 0.222, which shows that there is very low degree of positive Correlation between $EPS_{(t-1)}$ and MPS of NIC. And its coefficient of determination is 0.0493 means, MPS is affected by $EPS_{(t-1)}$ only 4.93% and rest 95.07% by other unknown variables .Since r<6PE, the value of r is not significant.

Similarly, coefficient of correlation between $EPS_{(t-1)}$ and MPS of MBL is 0.036 which shows that there is the lowest degree of positive Correlation between $EPS_{(t-1)}$ and MPS of MBL. And its coefficient of determination is 0.002 means, MPS is affected by $EPS_{(t-1)}$ only by 0.2% and rest 99.8% by other unknown variables. Since r<6PE, the value of r is not significant.

In the same way the coefficient of correlation between $EPS_{(t-1)}$ and MPS of NIBL is 0.288 which shows that there is low degree of positive Correlation between $EPS_{(t-1)}$ and MPS of NIBL. its coefficient of determination is 0.0829 its mean, MPS is affected by $EPS_{(t-1)}$ only 8.29% and rest 91.71% by other unknown variables .Since r<6PE, the value of r is not significant.

The coefficient of correlation between $EPS_{(t-1)}$ and MPS of HBL is 0.807, which shows that there is very high degree of positive Correlation between $EPS_{(t-1)}$ and MPS of HBL. Likewise, its coefficient of determination is 0.6512 means, MPS is affected by $EPS_{(t-1)}$ only by 65.12% and rest 34.88% by other unknown variables .Since r>6PE, the value of r is significant.

Likewise, coefficient of correlation between $EPS_{(t-1)}$ and MPS of KBL is -0.2425, which shows that there is low degree of negative Correlation between $EPS_{(t-1)}$ and MPS of KBL. Likewise, its coefficient of determination is 0.0588 means, MPS is affected by $EPS_{(t-1)}$ only by 5.88% and rest 94.22% by other unknown variables. Since r<6PE, the value of r is not significant.

From the analysis of above table it can be conclude that MPS of the all companies is not affected by the last Earning $EPS_{(t-1)}$ except in HBL. That means there is no high significant relationship between the MPS and Last Earning of the sample commercial banks.

4.2.1.4 Regression Analysis between EPS and MPS

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

$Y = a + bX$

$MPS_{NIC} = 10900.22 + 25.488 \times EPS_{NIC}$

$MPS_{MBL} = (-1092.36) + (-2.866) \times EPS_{MBL}$

$MPS_{NIBL} = 25525.95 + 15.95x\ EPS_{NIBL}$

$MPS_{HBL} = 46284.17 + 30.29x\ EPS_{HBL}$

$MPS_{KBL} = (-10213.94) + (-15.82) \times EPS_{KBL}$

Table 4.8

Regression Analysis between EPS and MPS

Banks	No. of Obsv. (n)	Constant (a)	Regression Coefficient (b)	T-value
NIC	5	10900.22	11.16	0.3944
MBL	5	-1092.36	-2.866	0.0624
NIBL	5	25525.95	15.95	0.521
HBL	5	46284.17	30.29	2.367
KBL	5	-10213.94	-15.82	0.446

The Table 4.8 depicts the major output of simple regression analysis of average market price per share (MPS) on Earning per share (EPS) of the sample commercial banks.

As far as the regression of MPS and EPS is concerned, the regression coefficient of NIC, MBL, NABIL, HBL and KBL are 11.16, -2.866, 15.95, 30.29 and -15.82 respectively. It indicates that a one-rupee increase in EPS leads to an average of Rs. 11.16 increase in MPS of NIC, Rs. 2.866 decrease in MPS of MBL, Rs. 15.95 increase MPS of NIBL, Rs. 30.29 increase MPS of HBL, and Rs. 15.82 decrease MPS of KBL bank. If the other variable remains constant the test of t-statistics aid to conclude that in NIC the relationship between MPS and EPS is insignificant, since the calculated value of t (0.3944) is lower than tabulated value of t (3.182). In MBL the relationship between MPS and EPS is insignificant as the calculated value of t (0.0624) is lower than tabulated value of t (3.182), in NIBL the results are also insignificant, since the calculated t-value (0.521) is lower than the tabulated t-value (3.182), in HBL the results are also insignificant, since the calculated t-value (2.367) is lower than the tabulated t-value (3.182) and in KBL

the result is also insignificant, since the calculated t-value (0.446) is lower than the tabulated t-value (3.182) at 5% level of significance.

4.2.1.5 Correlation between EPS and DPS

Table 4.9

Correlation coefficient between EPS and DPS

Banks	r	r^2	PE	Relationship	Significant/ Insignificant
NIC	0.747	0.558	0.133	Positive	Insignificant
MBL	0.641	0.411	0.177	Positive	Insignificant
NIBL	-0.534	0.285	0.216	Negative	Insignificant
HBL	0.433	0.188	0.245	Positive	Insignificant
KBL	0.592	0.351	0.196	Positive	Insignificant

(Source: Appendix)

The above table 4.9 explains the relationship between EPS and DPS of the concerned companies. The coefficient of correlation between EPS and DPS of NIC is 0.747, which shows that there is high degree of positive correlation between EPS and DPS of NIC. And its coefficient of determination is 0.558 which means, DPS is affected by EPS only by 55.8% and the rest 44.2% is affected by other variables. Since r<6PE, the value of r is not significant.

Likewise, coefficient of correlation between EPS and DPS of MBL is 0.641, which shows there is positive correlation between EPS and DPS of MBL. Likewise, its coefficient of determination is 0.411 which means, DPS is affected by EPS only by 41.1% and the rest 59.9% is affected by other variables. Since r< 6PE, the value of r is not significant, i.e. the correlation is uncertain.

Similarly, coefficient of correlation between EPS and DPS of NIBL is -0.534, which shows there is high degree of negative correlation between EPS and DPS of NIBL. And its coefficient of determination is 0.285 which means, DPS is affected by EPS only by 28.5% and the rest 71.5% is affected by other variables. Since, r< 6PE, the value of r is not significant.

In the same way, coefficient of correlation between EPS and DPS of HBL is 0.443, which shows there is positive correlation between EPS and DPS of HBL. Its coefficient of determination is 0.188, which means 18.8% of DPS is affected by EPS and rest is due to other unknown factors. Since r<6PE, the value of r is not significant.

In the same way, coefficient of correlation between EPS and DPS of KBL is 0.592, which shows there is high degree of Positive correlation between EPS and DPS of KBL. Its coefficient of determination is 0.351, which means 35.1% of DPS is affected by EPS and rest is due to other unknown factors. Since r<6PE, the value of r is not significant.

4.2.1.5 Regression Analysis between EPS and DPS

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

$Y = a + bX$

$DPS_{NIC} = 13.64 + 1.29 x EPS_{NIC}$

$DPS_{HML} = 0.3915 + 0.064x\ EPS_{HML}$

$DPS_{NIBL} = 8.22 + (-0.47\ EPS_{NIBL})$

$DPS_{HBL} = 23.86 + 0.271\ x\ EPS_{HBL}$

$DPS_{KBL} = 5.5 + 0.811\ x\ EPS_{KBL}$

Table 4.10

Regression Analysis between EPS and DPS

Banks	No. of Obsv. (n)	Constant (a)	Regression Coefficient (b)	T-value
NIC	5	13.64	1.29	2.927
MBL	5	0.392	0.064	1.885
NIBL	5	8.215	-0.47	1.294
HBL	5	23.856	0.271	0.8323
KBL	5	5.498	0.811	1.5799

(Source: Appendix I)

The Table 4.10 depicts the major output of simple regression analysis of average Earning price per share (EPS) on Dividend per share (DPS) of the concerned banks. As far as the regression of DPS and EPS is concerned, the regression coefficient of NIC, MBL, NABIL, HBL and KBL are 1.293, 0.064, -0.47, 0.271 and 0.811 respectively. It indicates that a one-rupee increase in EPS leads to an average of Rs. 1.293 increase in DPS of NIC, Rs 0.064 increase in DPS of MBL, Rs. 0.47 decrease DPS of NIBL, Rs. 0.271 increase DPS of HBL and Rs. 0.811 increase DPS of KBL bank. If the other variable remains constant the test of t-statistics aid to conclude that in NIC the relationship between DPS and EPS is insignificant, since the calculated value of t (2.927) is lower than tabulated value of t (3.182), in MBL the relationship between DPS and EPS is insignificant as the calculated value of t (1.885) is lower than tabulated value of t (3.182), in NIBL the results are also insignificant, since the calculated t-value (1.294) is lower than the tabulated t value (3.182), in the case of HBL result is also insignificant, since the calculated t-value (0.8323) is lower than the tabulated t-value (3.182) and the result of KBL is also insignificant, since calculated t-value(1.5799) is lower then tabulated t-value(3.182) at 5% level of significance.

4.3 Major Findings

The major findings obtained from the secondary data analysis are stated as follows:

- The average Earning per share of NIC, MBL, NIBL, HBL and KBL is Rs. 25.4, 10.28, 53.95, 55.27 and 20.38 respectively mean EPS of HBL is greater than other sample commercial banks and MBL is lower average EPS. Higher earning per share indicates the company is lower risk to investor then other lower EPS company.
- The average Dividend per share of NIC, MBL NIBL HBL and KBL is Rs. 5.95, 0.37, 15.5, 18.77 and 3.04 respectively mean DPS of HBL is greater than other sample commercial banks and MBL is lower average DPS, The MBL Can not paid any dividend in the year 2006/07, 2008/09 and 2009/10. Higher DPS indicate the company is greater return.
- Average market price per share of NIC, MBL, NIBL, HBL and KBL is Rs. 889.2, 585.4, 1506.4, 1479.2 and 689.2 respectively mean MPS of NIBL is greater than other commercial banks. Higher market price creates the positive attitude of the investors towards the bank, which consequently attracts the investor to invest in such high valued shares.
- Average Dividend Pay out ratio of NIC, MBL NIBL HBL and KBL is 18.26%, 2.87%, 31.14%, 34.37% and 13.24% respectively. Mean DPR of HBL is greater than other companies. Higher DPR indicate the company is greater return on dividend.
- The correlation of DPS & MPS of NIC, NIBL and KBL has negative correlation and HBL, MBL have positive correlation. If DPS increase its MPS decrease and vice versa.
- Correlation coefficient between EPS & MPS of HBL is significant and four other banks are in significant. All are positive relation of EPS and MPS. It means if EPS increase its MPS also increase and vice versa.
- Regression Coefficient (b) is highest between EPS and MPS of HBL and lowest is KBL. The highest t-value (2.367) is HBL and lowest t-value (0.0624) is MBL.HBL is more volatile and KBL is lower volatile.
- Correlation coefficients between EPS & DPS of all banks are significant but NIBL is negative relation and other four banks have positive relation.
- Regression Coefficient (b) is highest between EPS & DPS of NIC (1.29), NIBL have negative regression coefficient. In the case of t-value the NIC has highest t-value (2.927) and the HBL has a lowest (0.8323) t-value. It means DPS of NIC is more volatile.

SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 Summary

Dividend policy is one of the three major decisions of the financial management. The dividend refers to that portion of the firm's net earnings, which is paid out to the shareholders as a return for their investments. The dividend decision affects the operation, and prosperity of the organization. To attract the new investors and to maintain the existing ones, dividend can be used as an effective tool. Dividend implies paying earning to the equity share holders and theories of dividend policy differ, some prefer residual theory that conveys passive residual earning available for payment whereas MM hypothesis insists on dividend irrelevance in the sense that dividend policy does not affect the stock price (which makes dividend decision, irrelevance). There are others who argue that dividend policy does affect value due to uncertainty factor. Many factors affect the dividend payment depending upon the investors' need and preference on one hand and the financing need of the financial institution to the potential investment on the other hand.

The theoretical statement of this study is to study the impact of dividend policy on market price of the stock, therefore, it is concluded that more or less the dividend policy depends on the earning per share of a company; the earning per share and dividend per share having the positive relation may also impact on market price of stock. For this argument two simple regressions were formed. The first simple regression was formed to assess the impact of EPS on market price of share.

This study mainly aims the prevailing practices of listed companies regarding dividend payment. The study is mainly focused to access the dividend practices of selected commercial banks. Instability of dividend and haphazard payout ratio is the most common practice of Nepalese companies. Companies do not adequately maintain cash balance for dividend payment. So, it covers some specific objectives

to find out the relationship between other financial indicators and also to find out the appropriate dividend policies for different companies.

Shareholders have high expectation that market price of shares will be significantly higher than net worth. The companies invested by foreigners are paying more attractive dividend than the companies promoted by the indigenous promoters of Nepal. The study of relationship between the dividend and stock prices have been accomplished by collecting and calculating the earning per share, dividend per share, dividend payout ratio. To make the research reliable, many more analysis are conducted to find out appropriate relationship between dividend and other variables, which affects the dividend. The consistency of dividend distribution of different companies is also analyzed by using statistical tools. The relationship also statistically tested at 5% level of significance with 5 degree of freedom.

5.2 Conclusion

The primary objectives of investors investing in stocks are to earn dividend. But the earning of shareholders can be dividend as dividend gain and capital gain. High payout statistic the dividend need whereas increase in market price of stock increases capital gain. Therefore, the firm should make a proper balance between dividend distribution and retention of earning.

The thesis includes secondary data. But the presentation and calculation part is mainly based on the secondary data. According to the analysis of the data presented above it can be concluded that banks are performing well among them HBL is showing better performance. MPS of NIBL is also increasing regularly and has highest average MPS. All other banks also have good MPS and doing well as they are successful in increasing the share value and also better reputation in the marker due to it. EPS of all these banks are also high and increasing which encourages the new investors to invest in it and also the existing investors are

motivated. All five banks are consistently earning good return. HBL has good EPS every year than that of other five banks. But the distribution of dividend by these commercial banks is not regular and also not consistent. In this study MBL bank is very poor financial performance in MPS, EPS and DPS then other five banks. NIC, NIBL, HBL and KBL are good performance then MBL.

Finally on the basis of the secondary data, it can be concluded that HBL is more successful in gaining good position in the market than other banks. But NIBL is seen more consistent than other banks. Other banks have also shown satisfactory performance. Although, MPS of all banks are growing, none of them have consistency in DPS and DPR. So share holders many not be satisfied with them.

5.3 Recommendations

Although, this study is concerned with dividend practices of Nepalese Financial Institution, it may be appropriate to provide a package of suggestion in the light of major findings and conclusions. These recommendations may also have some repercussions, but there is no doubt of these measures to improve the existing conditions.

All banks have their own resources and on the basis of those resources management try to get the optimal result. This study has tried to find out some real facts about dividend policy and other inter related variables with dividend policy of different commercial banks .Based on the above summery and conclusions following recommendation have been provided hoping that these recommendations will be proved as a milestone to overcome the existing issues in this field.

- Shareholders should be given an opportunity to choose between the cash dividend, stock dividend and any other forms of dividend. So dividend declaration should be presented to the annual general meeting of shareholders for their approval. For this, banks first of all should make the investors well

known about the advantages and disadvantages of different forms of dividends through different media.

- There are no any clear legal provisions about the payment of dividends in our country. So the government should act in favor of the investors. Legal rules should be made in order to protect the rights of the shareholders.
- 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.
- The information regarding the secondary market and the capital market is not flashed out. So the concerning body should timely provide all the information about this factor.
- The payment of dividend is highly fluctuating. There are no any consistencies in the dividend distribution which creates confusions and miss conceptions about the firm among the investors.
- The government should encourage the establishment of organization to promote and to protect activities in favor of investors. Government should re the interference in the daily affairs of the organizations.
- Dividend policy of banks is not defined. They should define their dividend strategy clearly whether they are adopting stable dividend policy, constant payout ratio or low regular plus extra dividend policy.
- The payment of dividend is highly fluctuating, which is neither static nor constantly growing. Such inconsistency and irregularity in the dividend payment may create more confusion and miss-conception about that firm. Due to higher degree of risk and uncertainty, such fluctuations impact the firm's market price per share adversely. So these banks are advised to follow either static or constantly growing dividend payment policy.

EPS of Bank

Year	EPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	16.10	-9.5	90.25
2006/07	24.01	-1.59	2.53
2007/08	25.75	0.25	0.023
2008/09	27.83	2.3	4.97
2009/10	34.30	8.7	75.69
	127.99		173.463

$\overline{X}$ $= \frac{\Sigma EPS\ (X)}{N}$

$= \frac{127.99}{5} = 25.6$

σ $= \sqrt{\frac{\Sigma\ (X - \overline{X})^2}{N}}$

$= \sqrt{\frac{173.463}{5}}$

$= 5.89$

CV $= \frac{\sigma}{\overline{X}} = \frac{5.88}{25.8} = 0.2301$

EPS of Machhapuchhre Bank

Year	EPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	18.74	8.46	71.57
2006/07	9.02	-1.26	1.59
2007/08	10.35	0.07	0.001
2008/09	8.33	-1.95	3.8
2009/10	4.96	-5.32	28.3
	51.4		105.26

$$\overline{X} = \frac{\Sigma EPS\ (X)}{N}$$

$$= \frac{51.4}{8} = 10.28$$

$$\sigma = \sqrt{\frac{\Sigma\ (X - \overline{X})^2}{N}}$$

$$= \sqrt{\frac{105.26}{5}}$$

$$= 5.59$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{4.59}{10.28} = 0.4465$$

EPS of Investment Bank

Year	EPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	59.35	5.4	29.16
2006/07	62.57	8.62	74.3
2007/08	57.87	3.92	15.37
2008/09	37.82	-16.53	273.24
2009/10	52.55	-1.4	1.96
	269.76		394.03

$$\overline{X} = \frac{\Sigma EPS\ (X)}{N}$$

$$= \frac{269.76}{5} = 53.95$$

$$\sigma = \sqrt{\frac{\Sigma\ (X - \overline{X})^2}{N}}$$

$$= \sqrt{\frac{394.03}{5}}$$

$$= 8.88$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{8.88}{53.95} = 0.1646$$

EPS of BHL

Year	EPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	59.24	3.97	15.76
2006/07	60.66	5.39	29.05
2007/08	62.74	7.47	55.8
2008/09	61.90	6.63	43.96
2009/10	31.80	-23.47	550.84
	276.34		695.41

$$\overline{X} = \frac{\Sigma EPS\ (X)}{N}$$

$$= \frac{276.34}{5} = 55.27$$

$$\sigma = \sqrt{\frac{\Sigma\ (X - \overline{X})^2}{N}}$$

$$= \sqrt{\frac{695.41}{5}}$$

$$= 11.79$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{11.79}{55.27} = 0.2133$$

EPS of Kumari Bank

Year	EPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	16.59	-3.79	14.36
2006/07	22.70	2.32	5.38
2007/08	16.35	-4.03	16.24
2008/09	22.04	1.66	2.76
2009/10	24.24	3.86	14.90
	101.92		53.64

$$\overline{X} = \frac{\Sigma EPS\ (X)}{N}$$

$$= \frac{101.925}{5} = 20.38$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{5364}{5}}$$

$$= 3.27$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{3.27}{20.38} = 0.1605$$

DPS of NIC Bank

Year	DPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	0.53	-5.42	29.38
2006/07	1.05	-4.9	24.01
2007/08	1.05	-4.9	24.01
2008/09	0.79	-5.16	26.63
2009/10	26.32	20.374	414.94
	29.74		518.97

$$\overline{X} = \frac{\Sigma DPS\ (X)}{N}$$

$$= \frac{29.74}{5} = 5.95$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{518.97}{5}}$$

$$= 10.19$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{10.89}{5.95} = 1.7126$$

DPS of MBL

Year	DPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	0.79	0.42	0.176
2006/07	0	-0037	0.137
2007/08	0	-0.37	0.137
2008/09	1.05	0.68	0.462
2009/10	0	-0.37	0.137
	1.84		1.049

$$\overline{X} = \frac{\Sigma DPS\ (X)}{N}$$

$$= \frac{1.84}{5} = 0.37$$

$$\sigma = \sqrt{\frac{\Sigma\ (X - \overline{X})^2}{N}}$$

$$= \sqrt{\frac{1.49}{5}}$$

$$= 0.46$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{0.46}{0.37} = 1.243$$

DPS of NIBL

Year	DPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	20	4.5	20.25
2006/07	5	-10.5	110.25
2007/08	7.5	-8	64
2008/09	20	4.5	20.25
2009/10	25	9.5	90.25
	77.5		305

$$\overline{X} = \frac{\Sigma DPS\ (X)}{N}$$

$$= \frac{77.5}{5} = 15.5$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{305}{5}}$$

$$= 7.81$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{7.81}{15.5} = 0.5039$$

DPS of HBL

Year	DPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	30	11.23	126.11
2006/07	15	-3.77	14.21
2007/08	25	6.23	38.81
2008/09	12	-6.77	45.83
2009/10	11.84	-6.93	48.02
	93.84		272.98

$$\overline{X} = \frac{\Sigma DPS\ (X)}{N}$$

$$= \frac{93.84}{5} = 18.77$$

$$\sigma = \sqrt{\frac{\Sigma\ (X - \overline{X})^2}{N}}$$

$$= \sqrt{\frac{272.98}{5}}$$

$$= 7.39$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{7.39}{18.77} = 0.3997$$

DPS of KBL

Year	DPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	1.05	-1.99	3.96
2006/07	1.05	-1.99	3.96
2007/08	0.53	-2.51	6.30
2008/09	0.55	-2.49	6.20
2009/10	12	8.96	80.28
	15.18		100.7

$$\overline{X} = \frac{\Sigma DPS\ (X)}{N}$$

$$= \frac{15.18}{5} = 3.04$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{100.7}{5}}$$

$$= 4.49$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{4.49}{3.04} = 1.4770$$

MPS of NIC

Year	MPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	496	-393.2	154606.24
2006/07	950	60.8	3696.64
2007/08	1284	394.8	155867.04
2008/09	1126	236.8	55074.24
2009/10	626	-263.2	69274.24
	4446		439518.4

$$\overline{X} = \frac{\Sigma MPS\ (X)}{N}$$

$$= \frac{4446}{5} = 889.2$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{439518.4}{5}}$$

$$= 296.48$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{296.48}{889.2} = 0.3334$$

MPS of MBL

Year	MPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	320	-265.4	70437.16
2006/07	620	34.6	1197.16
2007/08	1285	699.6	489440.16
2008/09	420	-165.4	27357.16
2009/10	282	-303.4	92051.56
	2927		680483.2

$$\overline{X} = \frac{\Sigma \text{MPS (X)}}{N}$$

$$= \frac{2927}{5} =$$

$$\sigma = \sqrt{\frac{\Sigma (X - \overline{X})^2}{N}}$$

$$= \sqrt{\frac{68048.2}{5}}$$

$$= 368.9$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{368.9}{585.4} = 0.6302$$

MPS of NIBL

Year	MPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	1260	-246.4	60712.96
2006/07	1729	222.6	79550.76
2007/08	2450	943.6	890380.96
2008/09	1388	-118.4	14018.56
2009/10	705	-801.4	642241.96
	7532		1656905.2

$$\overline{X} = \frac{\Sigma MPS\ (X)}{N}$$

$$= \frac{7532}{5} = 1506.4$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{1656905.2}{5}}$$

$$= 575.66$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{575.66}{1506.4} = 0.3821$$

MPS of HBL

Year	MPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	1100	-379.2	143792.64
2006/07	1740	260.8	68016.64
2007/08	1980	500.8	250800.64
2008/09	1760	280.8	78848.64
2009/10	816	-663.2	439834.24
	7396		981292.8

$$\overline{X} = \frac{\Sigma \text{MPS (X)}}{N}$$

$$= \frac{7396}{5} = 1479.2$$

$$\sigma = \sqrt{\frac{\Sigma (X - \overline{X})^2}{N}}$$

$$= \sqrt{\frac{981292.8}{5}}$$

$$= 443.01$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{443.01}{1479.2} = 0.2995$$

MPS of KBL

Year	MPS (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	443	-246.2	60614.44
2006/07	830	140.8	19824.64
2007/08	1005	315.8	99729.64
2008/09	700	16.8	116.64
2009/10	468	-221.2	48929.44
	3446		229214.8

$$\overline{X} = \frac{\Sigma MPS\ (X)}{N}$$

$$= \frac{34.46}{5} = 689.2$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{229214.8}{5}}$$

$$= 214.11$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{214.11}{689.2} = 0.311$$

DPR of NIC Bank

Year	DPR (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	3.29	-14.98	224.1
2006/07	4.37	-13.89	192.93
2007/08	4.08	-14.18	201.07
2008/09	2.84	-15.42	237.78
2009/10	76.74	58.48	3419.91
	91.32		4275.79

$$\overline{X} = \frac{\Sigma DPR\ (X)}{N}$$

$$= \frac{91.32}{5} = 18.26$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{4275.79}{5}}$$

$$= ?29.21$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{29.24}{18.26} = 1.6013$$

DPR of MBL

Year	DPR (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	4.22	1.35	1.82
2006/07	0	-2.87	8.14
2007/08	10.15	7.28	53
2008/09	0	-2.87	8.24
2009/10	0	-2.87	8.24
	14.37		79.54

$\overline{X}$ = $\frac{\Sigma DPR\ (X)}{N}$

= $\frac{14.37}{5} = 2.87$

σ = $\sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$

= $\sqrt{\frac{79.54}{5}}$

= ?3.997 i.e. 4

CV = $\frac{\sigma}{\overline{X}} = \frac{4}{2.87} = 1.937$

DPR of NIBL

Year	DPR (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	33.7	2.56	6.55
2006/07	8	-23.14	535.46
2007/08	12.96	-18.18	330.51
2008/09	53.45	22.31	497.74
2009/10	47.57	16.43	269.95
	155.68		1640.21

$$\overline{X} = \frac{\Sigma DPR\ (X)}{N}$$

$$= \frac{155.68}{5} = 31.14$$

$$\sigma = \sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$$

$$= \sqrt{\frac{1640.21}{5}}$$

$$= ?18.11$$

$$CV = \frac{\sigma}{\overline{X}} = \frac{18.11}{31.14} = 0.5816$$

DPR of HBL

Year	DPR (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	50.64	16.27	264.71
2006/07	24.73	-9.64	92.93
2007/08	39.85	5.48	30.03
2008/09	19.39	-14.98	224.40
2009/10	37.23	2.86	8.18
	171.84		620.25

$\overline{X}$ = $\frac{\Sigma DPR\ (X)}{N}$

= $\frac{171.84}{5} = 34.37$

σ = $\sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$

= $\sqrt{\frac{620.25}{5}}$

= ?11.14

CV = $\frac{\sigma}{\overline{X}} = \frac{11.14}{34.37} = 0.3241$

DPR of KBL

Year	DPR (X)	$X-\overline{X}$	$(X-\overline{X})^2$
2005/06	6.33	-6.91	47.75
2006/07	4.63	-8.61	74.13
2007/08	3.24	-10	100
2008/09	2.50	-10.74	115.35
2009/10	49.5	36.26	1314.79
	66.2		1652.02

$\overline{X}$ = $\frac{\Sigma DPR\ (X)}{N}$

= $\frac{66.2}{5} = 13.24$

σ = $\sqrt{\frac{\Sigma\ (X-\overline{X})^2}{N}}$

= $\sqrt{\frac{1652.02}{5}}$

= ?18.18

CV = $\frac{\sigma}{\overline{X}} = \frac{18.18}{13.24} = 1.373$

Simple Regression of MPS and EPS of NIC Bank

EPS (X)	MPS (Y)	XY	X^2	Y^2
16.10	496	7985.60	259.21	246016.00
24.01	950	22809.50	576.48	902500.00
25.75	1284	33063.00	663.06	1648656.00
27.83	1126	31336.58	774.51	1267876.00
34.30	626	21471.80	1176.49	391876.00
127.99	4482	116666.48	3449.75	4456924.00

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

$$= \frac{5 \times 116666.48 - 127.99 \times 4482}{\sqrt{5 \times 3449.75 - (127.99)^2} \times \sqrt{5 \times 4456924 - (4482)^2}}$$

$$= \frac{9681.22}{29.45 \times 1481.99}$$

$$= 0.222$$

$r^2 = 0.0493$

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

$$= \frac{0.222 \times \sqrt{5-2}}{\sqrt{1-0.0493}}$$

$$= 0.3944$$

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

$$= \frac{0.6745 \times (1-0.0993)}{\sqrt{5}}$$

$$= 0.2868$$

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

$$= \frac{5 \times 11666.48 - 127.99 \times 4482}{5 \times 3449.75 - (127.99)^2}$$

$$= \frac{9681.22}{867.31}$$

$$= 11.16$$

$$a = \frac{\Sigma Y}{n} + b \times \frac{\Sigma Y}{n}$$

$$= \frac{4482}{5} + 11.16 \times \frac{127.99}{5}$$

$$= 896.4 + 11.16 \times 25.6$$

$$= 1182.1$$

Simple Regression of MPS and EPS of MBL

EPS (X)	MPS (Y)	XY	X^2	Y^2
16.10	496	7985.60	259.21	246016.00
24.01	950	22809.50	576.48	902500.00
25.75	1284	33063.00	663.06	1648656.00
27.83	1126	31336.58	774.51	1267876.00
34.30	626	21471.80	1176.49	391876.00
127.99	4482	116666.48	3449.75	4456924.00

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

$$= \frac{5 \times 116666.48 - 127.99 \times 4482}{\sqrt{5 \times 3449.75 - (127.99)^2} \times \sqrt{5 \times 4456924 - (4482)^2}}$$

$$= \frac{9681.22}{29.45 \times 1481.99}$$

$$= 0.222$$

$r^2 = 0.0493$

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

$$= \frac{0.222 \times \sqrt{5-2}}{\sqrt{1-0.0493}}$$

$$= 0.3944$$

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

$$= \frac{0.6745 \times (1-0.0993)}{\sqrt{5}}$$

$$= 0.2868$$

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

$$= \frac{5 \times 11666.48 - 127.99 \times 4482}{5 \times 3449.75 - (127.99)^2}$$

$$= \frac{9681.22}{867.31}$$

$$= 11.16$$

$$a = \frac{\Sigma Y}{n} + b \times \frac{\Sigma Y}{n}$$

$$= \frac{4482}{5} + 11.16 \times \frac{127.99}{5}$$

$$= 896.4 + 11.16 \times 25.6$$

$$= 1182.1$$

Simple Regression of MPS and EPS of NIBL

EPS (X)	MPS (Y)	XY	X^2	Y^2
59.35	1260	74781.00	3522.42	1587600.00
62.57	1729	108183.53	3915.00	2989441.00
57.87	2450	141781.50	3348.94	6002500.00
37.42	1388	51938.96	1400.26	1926544.00
52.55	705	37047.75	2761.50	497025.00
269.76	7532	413732.74	14948.12	13003110.00

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

$$= \frac{5 \times 413732.74 - 269.76 \times 7532}{\sqrt{5 \times 14948.13 - (269.76)^2} \times \sqrt{5 \times 13003110 - (7532)^2}}$$

$$= \frac{36831.38}{44.39 \times 2879.29}$$

$$= 0.288$$

r^2 = 0.0829

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

$= \frac{0.6745 \times (1 - 0.0829)}{\sqrt{5}}$

$= 0.277$

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

$= \frac{5 \times 413732.74 - 269.76 \times 7532}{5 \times 14948.13 - (269.76)^2}$

$= \frac{36831.38}{2309.69}$

$= 15.945$

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{7532}{5} \times 15.94.5 - \frac{7532}{5}$

$= 25525.95$

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

$= \frac{0.288 \times \sqrt{5-2}}{\sqrt{1 - 0.0829}}$

$= 0.521$

Simple Regression of MPS and EPS of HBL

EPS (X)	MPS (Y)	XY	X^2	Y^2
59.24	1100	65164.00	3509.38	1210000.00
60.66	1740	105548.40	3679.64	3027600.00
62.74	1980	124225.20	3936.31	3920400.00
61.9	1760	108944.00	3831.61	3097600.00
31.8	816	25948.80	1011.24	665856.00
276.34	7396	429830.40	15968.17	11921456.00

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

$$= \frac{5 \times 429830.4 - 269.76 \times 7396}{\sqrt{5 \times 15968.17 - (276.34)^2} \times \sqrt{5 \times 11921456 - (7396)^2}}$$

$$= \frac{105341.36}{58.96 \times 2215.1}$$

$$= 0.807$$

r^2 = 0.06512

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

$= \frac{0.6745 \times (1 - 0.6512)}{\sqrt{5}}$

$= 0.105$

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

$= \frac{5 \times 429830.4 - 276.34 \times 7396}{5 \times 15968.17 - (276.34)^2}$

$= \frac{105341.36}{3477.05}$

$= 30.29$

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{7396}{5} \times 30.29 - \frac{7396}{5}$

$= 46284.17$

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

$= \frac{0.288 \times \sqrt{5-3}}{\sqrt{1 - 0.6512}}$

$= 2.3667$

Simple Regression of MPS and EPS of KBL

EPS (X)	MPS (Y)	XY	X^2	Y^2
16.59	443	7349.37	275.23	196249
22.7	830	18841.00	515.29	688900
16.35	1005	16431.75	267.32	1010025
22.04	700	15428.00	485.76	490000
24.24	468	11344.32	587.58	219024
101.92	3446	69394.44	2131.18	2604198

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

$$= \frac{5 \times 69394.44 - 101.92 \times 3446}{\sqrt{5 \times 2131 - (101.92)^2} \times \sqrt{5 \times 26071980 - (3446)^2}}$$

$$= \frac{-4244.12}{16.35 \times 1070.55}$$

$$= -0.2425$$

$r^2 = 0.0588$

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

$= \dfrac{0.6745 \times (1 - 0.05889)}{\sqrt{5}}$

$= 0.2839$

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

$= \dfrac{5 \times 69394.44 - 101.92 \times 3446}{5 \times 2131.18 - (101.92)^2}$

$= \dfrac{-4244.12}{268.21}$

$= -15.82$

a $= \dfrac{\Sigma Y}{n} \times b - \dfrac{\Sigma Y}{n}$

$= \dfrac{3446}{5} \times (-15.82) \times \dfrac{3446}{5} = -10213.94$

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

$= \dfrac{0.288 \times \sqrt{3}}{\sqrt{1 - 0.0588}}$

$= 0.4463$

Simple Regression of MPS and DPS of NIC Bank

DPS (X)	MPS (Y)	XY	X^2	Y^2
0.53	496	262.88	0.28	246016
1.05	950	997.50	1.10	902500
1.05	1284	1348.20	1.10	1648656
0.79	1126	889.54	0.62	1267876
26.32	626	16476.32	692.74	391876
29.74	4482	19974.44	695.85	4456924

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

$$= \frac{5 \times 19874.44 - 2974 \times 4482}{\sqrt{5 \times 695.85 - (29.74)^2} \times \sqrt{5 \times 4456924 - (4482)^2}}$$

$$= \frac{-33922.48}{50.94 \times 1481.99}$$

$$= -0.449$$

$r^2 = (-0.449)^2 = 0.202$

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

$= \frac{0.6745 \times (1 - 0.202)}{\sqrt{5}}$

$= 0.241$

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

$= \frac{-33922.48}{2594.88} = -13.1$

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{4482}{5} \times (-13.1) \times \frac{4482}{5} = -10846.44$

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

$= \frac{-0.449 \times \sqrt{3}}{\sqrt{1 - 0.202}}$

$= -0.871$

$= 0.871$

Simple Regression of MPS and DPS of MBL

DPS (X)	MPS (Y)	XY	X^2	Y^2
0.79	320	252.80	0.62	102400
0	620	0.00	0.00	384400
1.05	1285	1349.25	1.10	1651225
0	420	0.00	0.00	176400
0	282	0.00	0.00	79524
1.84	2927	1602.05	1.73	2393949

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

$$= \frac{5 \times 1602.05 - 1.84 \times 2927}{\sqrt{5 \times 1.727 - (1.84)^2} \times \sqrt{5 \times 2393949 - (2927)^2}}$$

$$= \frac{2624.57}{2.29 \times 1844.56}$$

$$= 0.621$$

$r^2 = (0.621)^2 = 0.386$

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

$= \frac{0.6745 \times (1 - 0.386)}{\sqrt{5}}$

$= 0.1852$

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

$= \frac{2624.57}{5.249} = 500.01$

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{2927}{5} \times 500 \times \frac{2927}{5} = 293291.25$

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

$= \frac{0.621 \times \sqrt{3}}{\sqrt{1 - 0.185}}$

$= 1.191$

Simple Regression of MPS and DPS of NIBL

DPS (X)	MPS (Y)	XY	X^2	Y^2
20	1260	25200.00	400.00	1587600
5	1729	8645.00	25.00	2989441
7.5	2450	18375.00	56.25	6002500
20	1388	27760.00	400.00	1926544
25	705	17625.00	625.00	497025
77.5	7532	97605.00	1506.25	13003110

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

$$= \frac{5 \times 97585 - 77.5 \times 7732}{\sqrt{5 \times 1506.25 - (77.5)^2} \times \sqrt{5 \times 13003110 - (7532)^2}}$$

$$= \frac{-95805}{39.05 \times 2878.29}$$

$$= -0.85247$$

$r^2 = (0.852)^2 = 0.726$

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

$= \frac{0.6745 \times (1 - 0.726)}{\sqrt{5}}$

= 0.083

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

$= \frac{-95805}{1524.9}$

= -62.83

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{7532}{5} \times (-62.83) \times \frac{7532}{5} = -93140.71$

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

$= \frac{-0.852 \times \sqrt{3}}{\sqrt{1 - 0.726}}$

= -5.386

i.e. = 5.386

Simple Regression of MPS and DPS of HBL

DPS (X)	MPS (Y)	XY	X^2	Y^2
30	1100	33000.00	900.00	1210000
15	1700	25500.00	225.00	2890000
25	1980	49500.00	625.00	3920400
12	1760	21120.00	144.00	3097600
11.84	816	9661.44	140.19	665856
93.84	7396	138781.44	2034.19	11783856

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

$$= \frac{5 \times 139338.14 - 93.84 \times 7396}{\sqrt{5 \times 2034.19 - (93.84)^2} \times \sqrt{5 \times 11921456 - (7396)^2}}$$

$$= \frac{2866.56}{3695 \times 2215.054}$$

$$= 0.035$$

$r^2 = (0.035)^2 = 0.0012$

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

$= \frac{0.6745 \times (1 - 0.0012)}{\sqrt{5}}$

= 0.3013

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

$= \frac{2866.56}{1365.3}$

= 2.1

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{7396}{5} \times 2.1 \times \frac{7396}{5} = 4585.52$

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

$= \frac{0.03.5 \times \sqrt{3}}{\sqrt{1 - 0.0012}}$

= 0.0607

Simple Regression of MPS and DPS of KBL

DPS (X)	MPS (Y)	XY	X^2	Y^2
1.05	443	465.15	1.10	196249
1.05	830	871.50	1.10	688900
0.53	1005	532.65	0.28	1010025
0.55	700	385.00	0.30	490000
12	468	5616.00	144.00	219024
15.18	3446	7870.30	146.79	2604198

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

$$= \frac{5 \times 7870.3 - 1518 \times 3446}{\sqrt{5 \times 146.79 - (15.18)^2} \times \sqrt{5 \times 2604198 - (3446)^2}}$$

$$= \frac{-12958.78}{22.44 \times 1070.55}$$

$$= -0.539$$

$r^2 = (-0.539)^2 = 0.291$

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

$= \frac{0.6745 \times (1 - 0.291)}{\sqrt{5}}$

$= 0.214$

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

$= \frac{-12958.78}{503.55}$

$= -25.73$

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{3446}{5} \times (-25.73) \times \frac{3446}{5} = -17043.92$

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

$= \frac{-0.539 \times \sqrt{3}}{\sqrt{1 - 0.291}}$

$= 1.317$

Simple Regression of EPS and DPS of NIC

EPS (X)	DPS (Y)	XY	X^2	Y^2
16.1	0.53	8.53	259.21	0.28
24.01	1.05	25.21	576.48	1.10
25.75	1.05	27.04	663.06	1.10
27.83	0.79	21.99	774.51	0.62
27.83	26.32	732.49	774.51	692.74
127.99	29.74	815.25	3047.77	695.85

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

$$= \frac{5 \times 985.55 - 127.99 \times 29.74}{\sqrt{5 \times 3449.79 - (127.99)^2} \times \sqrt{5 \times 695.85 - (29.74)^2}}$$

$$= \frac{1121.33}{29.45 \times 50.94}$$

$$= 0.747$$

$r^2 = (0.747)^2 = 1.293$

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

$= \frac{0.6745 \times (1 - 0.558)}{\sqrt{5}}$

= 0.1332

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

$= \frac{1121.33}{867.3}$

= 1.293

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{29.74}{5} \times 1.293 \times \frac{29.74}{5} = 13.64$

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

$= \frac{0.747 \times \sqrt{3}}{\sqrt{1 - 0.558}}$

= 2.92742

Simple Regression of EPS and DPS of MBL

EPS (X)	DPS (Y)	XY	X^2	Y^2
18.74	0.79	14.80	351.19	0.62
9.02	0	0.00	81.36	0.00
10.35	1.05	10.87	107.12	1.10
8.33	0	0.00	69.39	0.00
4.96	0	0.00	24.60	0.00
51.4	1.84	25.67	633.66	1.73

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

$$= \frac{5 \times 25.67 - 51.4 \times 1.84}{\sqrt{5 \times 634.16 - (51.42)^2} \times \sqrt{5 \times 1.727 - (1.84)^2}}$$

$$= \frac{33.74}{23 \times 2.29}$$

$$= 0.641$$

$r^2 = (10.641)^2 = 0.411$

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

$= \frac{0.6745 \times (1 - 0.411)}{\sqrt{5}}$

$= 0.1777$

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

$= \frac{33.74}{529}$

$= 0.0638$

a $= \frac{\Sigma Y}{n} \times b - \frac{\Sigma Y}{n}$

$= \frac{1.84}{5} \times 0.0638 \times \frac{1.84}{5} = 0.3915$

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

$= \frac{0.641 \times \sqrt{3}}{\sqrt{1 - 0.411}}$

$= 1.885$

Simple Regression of EPS and DPS of NIBL

EPS (X)	DPS (Y)	XY	X^2	Y^2
59.35	20	1187.00	3522.42	400.00
62.57	5	312.85	3915.00	25.00
57.87	7.5	434.03	3348.94	56.25
37.42	20	748.40	1400.26	400.00
52.55	25	1313.75	2761.50	625.00
269.76	77.5	3996.03	14948.12	1506.25

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

$$= \frac{5 \times 3996.03 - 269.76 \times 77.5}{\sqrt{5 \times 14948.13 - (269.76)^2} \times \sqrt{5 \times 1506.25 - (77.5)^2}}$$

$$= \frac{-926.25}{44.39 \times 39.05}$$

$$= -0.534$$

$r^2 = (-0.534)^2 = 0.285$

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

$= \dfrac{0.6745 \times (1 - 0.285)}{\sqrt{5}}$

$= 0.216$

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

$= \dfrac{-926.25}{1970.47}$

$= -0.47$

a $= \dfrac{\Sigma Y}{n} \times b - \dfrac{\Sigma Y}{n}$

$= \dfrac{77.5}{5} \times (-0.47) \times \dfrac{77.5}{5} = 8.215$

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

$= \dfrac{-0.534 \times \sqrt{3}}{\sqrt{1 - 0.285}}$

$= 1.2936$

Simple Regression of EPS and DPS of HBL

EPS (X)	DPS (Y)	XY	X^2	Y^2
59.24	30	1777.20	3509.38	900.00
60.66	15	909.90	3679.64	225.00
62.74	25	1568.50	3936.31	625.00
61.9	12	742.80	3831.61	144.00
31.8	11.84	376.51	1011.24	140.19
276.34	93.84	5374.91	15968.17	2034.19

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

$$= \frac{5 \times 5374.91 - 276.34 \times 93.84}{\sqrt{5 \times 15968.17 - (276.34)^2} \times \sqrt{5 \times 2034.19 - (93.84)^2}}$$

$$= \frac{942.8}{58.97 \times 36.75}$$

$$= 0.4331$$

$r^2 = (0.4331)^2 = 0.1876$

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

$= \dfrac{0.6745 \times (1 - 0.1876)}{\sqrt{5}}$

$= 0.245$

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

$= \dfrac{942.8}{3477.46}$

$= 0.2711$

a $= \dfrac{\Sigma Y}{n} \times b - \dfrac{\Sigma Y}{n}$

$= \dfrac{9384}{5} \times 0.2711 \times \dfrac{93.84}{5} = 23.856$

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

$= \dfrac{0.4331 \times \sqrt{3}}{\sqrt{1 - 0.1876}}$

$= 0.8323$

Simple Regression of EPS and DPS of KBL

EPS (X)	DPS (Y)	XY	X^2	Y^2
16.59	1.05	17.42	275.23	1.10
22.7	1.05	23.84	515.29	1.10
16.35	0.53	8.67	267.32	0.28
22.04	0.55	12.12	485.76	0.30
24.24	12	290.88	587.58	144.00
101.92	15.18	352.92	2131.18	146.79

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

$$= \frac{5 \times 352.93 - 101.92 \times 15.18}{\sqrt{5 \times 2131.18 - (101.92)^2} \times \sqrt{5 \times 146.79 - (15.18)^2}}$$

$$= \frac{217.5}{16.38 \times 22.44}$$

$$= 0.592$$

$r^2 = (0.592)^2 = 0.351$

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

$= \dfrac{0.6745 \times (1 - 0.3251)}{\sqrt{5}}$

$= 0.1958$

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

$= \dfrac{217.6}{268.3}$ $= 0.811$

a $= \dfrac{\Sigma Y}{n} \times b - \dfrac{\Sigma Y}{n}$

$= \dfrac{15.18}{5} \times 0.811 \times \dfrac{15.18}{5} = 5.498$

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

$= \dfrac{0.592 \times \sqrt{3}}{\sqrt{1 - 0.351}}$

$= 1.5799$