CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Today, there are many countries in the world. Some countries are developed, some are developing and some are least developed. Those countries whose economy is very developing and some are least developed. These counties whose economy is very strong are said as developed countries while those countries whose counties economy is weak are said as developing countries and least developed countries. The degrees of resources utilization to procedure goods and services with development of market to consume them are the major indicators of economic development of a country. These are mainly two types of market on the basis of nature of product, commodity market and financial market. The market on where the activities of exchanging money, lending of money, trading of security etc are performed is called financial market. Financial market can be divided in to money market and capital market. In money market short- term funds are traded where in capital market long term funds are traded.

The overall development of a country largely depends upon the economic development of the country. Development of capital marker and money market is essential to develop the economy of a country. Banks, financial companies and other financial institutions help to develop the money market as well as the capital market by mobilizing the deposit amount which are collect from public and investing the sum total of small investors. Commercial banks are those financial institutions, which are established to use the scattered financial resources to the productive commercial areas to profit. Financing in the different economic field lime industries, trade, agriculture etc to generate profit, is the main objective of commercial banks. In addition to the primary function receiving deposit and lending to the others, it undertakes a wide variety of functions to assist the customers by performing agency functions like collection of cheques, bills, dividends etc. on behalf of the customer; transfer of funds, purchase and sale of etc.

In a capital market, all firm operator to generate earnings. Shareholders make investment in equity capital with the expectation of market earning either directly in the form of dividend or indirectly in the form of capital gains in future. Thus shareholders wealth can be increased through either dividends or capital gains. In simple word, the divisions of the profit of the firm, which are received by the shareholders of the company are called dividend. However, they do not became the property of the shareholders and have no

right to them until directors of the company regarding division of profit between dividend and retention is known as dividend policy. Before making dividend decision a firm should forecast its future needs for the funds and then determine the amount to be retained. The study of dividend policy helps to know how a firm divides its net earning into retained earning and dividend. In general, firm can choose among different forms of dividend policies based on their earnings and capital requirement.

In the theory of finance, dividend decision plays a very crucial role. Dividend decision however is still a crucial as well as controversial area of managerial finance. It is more technical area of finance in the sense that it is complex on having numerous implications for the firm, flow of funds, stock prices, investor satisfaction, growth of a firm etc like other major decisions of the firm i.e. investing and financing decision, the decision has major role in every organization.

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 significance sources of funds for financial corporate growth, but dividends constitute the cash flows that accurate to stockholders. The study of dividend policy helps to know how a firm divides its net earning into retained earning and dividend. In practice, dividend policy varies from firm to firm and industry to industry. Some firm pay whole earnings as dividend and some retain more of the earnings and pay fewer dividends. Instead of paying dividend a firm can retain the funds to exploit other growth opportunities. The shareholders can expect benefit indirectly thorough future increase in price of stock. So dividend policy involves the decision to payout earnings versus retaining them for re-investment in the firm.

The dividend payout reduces the amount of earnings retained in the firm and affect total amount of internal financing. For expansion of every firm, there should be extra financing. This financing can be made either through the internal sources or external. The external source includes the issue of shares, bonds, debentures etc whereas the internal source is the earning retained after payment of dividend policy adopted by the firm. For the existing firm, it is necessary to analyze which source is more profitable because the cost of external financing is relative high as compared the retained earning due to the extra cost required.

Dividend can be distributed to shareholders by a company in the form of cash, properties, shares and securities or a combination of these. But in Nepal dividend distributed in the form of cash or shares is the practice. Companies distributed the dividend semi-annually, annually, quarterly, or monthly. Nepal's dividend is usually paid annually. Some retained

all amount for reinvested and some paid the amount as dividend. In Nepal partial dividend payment is in practice.

In the context of Nepal, most of the public enterprises are operating in loss. In such situation it is not possible to distribute dividend. Such enterprises mainly focus on minimizing their loss. There are few companies, there is a new trend of distributing dividends that encourage the investor to invest in the companies and mobilize the fund. Dividend distribution trend has not only attracted the investor the investor but has also made the management conscious about the policy regarding the payment of dividend.

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

1.2 Profile of Selected Companies

There are 159 companies listed with Nepal stock Exchange Ltd. There are few companies whose shares are traded active in the stock market and pay dividend due to earning the profit or retained earning. Out of these companies the following companies are selected for the study belongs to the joint venture banks.

1. **Nepal SBI Bank Ltd.**

Nepal SBI Bank Ltd was established on 1993 A.D. and listed on Nepal Stock Exchange Ltd on 1995 A.D. In this bank, capital contribution from state bank of India is 50%, from Agriculture Development Bank is 5%, from employees Provident Fund is 15% and from general public is 30%. Head office of this bank is in Durbar Marga, Kathmandu. It has 37 branches in Major cities of Nepal.
Nepal SBI Bank Ltd has authorized capital of Rs 200 crores, issued capital of Rs 131.67 crores and paid up capital of Rs 131.67 crores

2. **NABIL Bank Ltd.**

NBIL Bank is the first joint venture bank with foreign investment of Nepal from Dubai bank Ltd. It was established in 1984 A.D. The ownership of Dubai Bank Ltd was transferred to Emirate Bank International Ltd In this bank capital Contribution from Emirate Bank International Ltd was 50% when this bank was established. Its main objective were to develop the economy of the country by increasing foreign trade, increase the earning of foreign currency, helping on importing advance banking technologies. Head office of NABIL Ltd is in Kamaladi, Kathmandu and it has 15 branches all over the country.

NABIL Bank ltd has authorized capital of Rs1600 millions, issued capital of Rs689.216 millions and paid up capital of Rs689.216 millions. It has listed in Nepal Stock Exchange in 1986.

3. Himalayan Bank Ltd.

Himalayan Bank Ltd was established in 1993 A.D. as a fourth joint venture bank of Nepal with Habib bank limited of Pakistan and listed on Nepal Stock Exchange Ltd in 1993 A.D. It has been established to maintain the economic welfare of the general people to facilitate loan for agriculture, industry and commerce to provide the banking services to the country and people. Head office of this bank is in Thamel, Kathmandu. It has 22 branches in major cities of Nepal.
Himalayan Bank Ltd has authorized capital of Rs.2 billions, issued capital of Rs 1.0135125 billions and paid up capital of Rs.1.0135125 billions.

4. Everest Bank Ltd.

Everest Bank Ltd was established in 1994 A.D. as a joint venture bank of Nepal with Punjab National Bank Ltd of India and with the objective of extending professionalized and efficient banking service to various segments of the society and listed on Nepal Stock Exchange Ltd in 1996. In this bank, capital contribution from Nepalese Promoters is 50%, Punjab National Bank Ltd is 20% and from general public is 30%. Head office of this bank is in Lazimpat, Kathmandu. It has 34 branches in major cities of Nepal.

Everest Bank Ltd has authorized capital of Rs1 billion issued capital of Rs 843.2 million and paid up capital of Rs831.4 millions.

1.3 Focus of the Study

In the firm, dividend policy is taken as major financial decision that affects the value of the firm. The main focus of the study is to examine the practice made by the sample firm in regards to the dividend policy. But for whole these purpose different studies are going to be done i.e. comparison of earning per share (EPS), dividend per share (DPS), market price per share (MPS) and other as per the requirement of the respect to the sample firm. This study will be more focusing on the dividend policy and MPS; however other qualitative decision will be submitted including the Nepalese practices. The relationship between different variables will be individually and combinely analyzed in order to state the particular suggestion. In the same way, the study will be focus on behavioral aspects of Nepalese investors but in regards to dividend practices made in past six years by the sample firms.

1.4 Statement of the Problem

Dividend decision is a major important part of managerial finance. However different financial experts have viewed dividend differently but dividend decision is still a crucial as well as controversial area of managerial finance in the sense that investors invest their money in equity capital for extra income that they can achieve from getting dividend or capital gain. The effect of dividend policy on a corporation's market value (or market value of share) is a subject of long standing argument. While examining the dividend policy of firms and factors that affect dividend policy and relationship between dividend policy and value of firms, different theories have been introduced, some argue that dividend does not affect the value of firm and considered dividend decision to be irrelevant while others argue active variable influencing the value of the firm and stock price. But still there is no single conclusion regarding the relationship between the dividend payment and market price of share.

Dividend is the most stimulating factor for the investment on shares of the company id thus desirable from the stockholders point of view. In one hand the payment of dividend makes the investors happy. But in the other hand the payment in good opportunities. This will hamper the growth of the firm. There may be various factors that cause fluctuation in the share prices. Dividend decision is affected by the different other factors like various government rules and regulations, liquidity position, restrictions in debt contracts, stability of earning, willing to retain controlling power of shareholders etc.

The capital market is an important part of corporate development of a country. Even capital market is in the early stage of development in Nepal, Nepalese investors have heavily made investment on newly established companies, especially in the financial sector. Dividend is the most inspiring aspect for the investment in the shares of various companies for an investor. Even if dividend affects the firm's value, unless management knows exactly how they affect value, there is not mush that they can do to increase he shareholders wealth. So it is necessary for the management to understand how the dividend policy affects the market valuation of the firm or market price of the stock.

In real practice there is relationship between dividend and the stock price and various factors, however, the relationship is not yet clear and controversial issue in financial literature. This study will explore to shed some light on dividend policy and practice on Nepalese firm. The study mainly deals with the following issues;

1. Are the banks able to pay appropriate dividend?
2. What kind of distribution policy does Nepalese firm follow?

3. What is the relationship of dividend with EPS, MPS, DPS,DPR, Net Profit, Net worth and Book value per share?
4. Is there any uniformity in dividend distribution among the sample joint venture banks?
5. Does the dividend policy impact on the market price of the share of the banks?

1.5 Objective of the Study

The major objective of the study is to examine the impact of dividend policy and practice in Nepal and factors that affect dividend policy directly and indirectly of only selected joint venture banks and manicuring companies.

1. To study and highlight the prevailing dividend policy adopted by selected joint venture commercial banks.
2. To analyze the relationship of dividend policy with various financial indicators like DPS, EPS, MPS, and DPR in the sample firms.
3. To analyze the impact of dividend policy on market price of sampled bank.
4. To provide some fruitful suggestion and recommendation to the chosen bank regarding their dividend policy, so that they can follow the better policy if the exiting policy is not fruitful enough.

1.6 Significance of the Study

After adopting the privatization and liberalization policy, the corporate sector of Nepal is developing. The security market is in developing stage after the Nepal Stock exchange and security board established in 1993 A.D. IN Nepal, Due to lack of enough knowledge, people are investing hit-or-miss in shares. It is thus necessary to establish clear conceptions about the return resulting from investing in the stocks. Nepal's investors are attracted towards the investing in companies for the purpose of getting more earning. They can get earning by investing in shares in two ways; dividend gain earning and capital fain earning. But because of lack of knowledge and information people invest on the security by own random judgments. So this study will be beneficial to the investors, dividend policy makers, managers and ordinary people and for the researcher. This study will be helpful to the government for policymaking, monitoring and supervising purpose.

1.6 Limitation of the Study

Dividend policy is the vital aspect of the financial management. For a corporate manager, it is the most challenging and crucial part of the decision making process because it is the signaling effect towards market price of the shares. To make the study more specific only 5 joint venture commercial banks are chosen for study. This study is basically for the partial fulfillment for MBS programmed. So the folling limitation retains the study;

1) This study covers only few selected joint venture commercial banks as a sample.
2) There are so many determinants that affect dividend decision and this study will only   cover the dividend related factors
3) This study relies on secondary date collected from Annual Reports of respective firms and the data available in NEPSE.
4) The study periods covers only 6 years i.e. 2003-2008.
5) This study and its result will depend on the availability and reliability of the data.

1.8 Organization of the study

The study will be organized in the following ways;

Chapter-I; Introduction
This chapter deals with subject matters of the study consisting background of the study, focus of the study, statement of the problem, objective of the study, significance of the study and limition of the study.

Chapter –II; Review of Literature
This chapter deals with review of the different literature of study field. Therefore it includes conceptual framework along with the review of major books, journal, research works thesis etc.

Chapter-III; Research Methodology
This chapter deals research methodology and it includes research design, population and sample, source and technique of data collection, data analysis tools and limitation of the methodology.

Chapter-IV; Data Analysis and Analysis
It deals with presentation and analysis of relevant data and information through definite courses of methodology and major findings.

Chapter-V; Summary, Conclusion and recommendations
 It states summary, conclusion and recommendation of the study. This chapter states main findings, issues and gaps and suggestive framework of study.

CHAPTER-II

REVIEW OF LITERATURE

After selecting the topics of the research, researchers need to review related literatures in the concerned areas which will help to get a clear idea, opinion and other concepts. "What others have said? What others have done? And what others have written?" These all and other related qualities are reviewed which has provided useful inputs in this research inputs in this research work.

The present research aims to analyze the dividend policy of commercial bands in Nepal. In this chapter conceptual framework given by different authors and intellectuals of this area, magazine, books, journals, research works, previous thesis etc related to dividend and dividend policy are reviewed. Moreover, the rules and regulation regarding to dividend policy are reviewed and an attempt has been made to present them properly.

This chapter is divided in to three parts:
    2.1 Conceptual framework
    2.2 Review of rules and regulations regarding to dividend policy
    2.3 Review of related studies

2.1 Conceptual Framework

Company's total net income (especially earning available to equity shareholders can be divided into two parts; earning to be distributed to the shareholders and earning to be kept in the organization. Earning that are in distributed to the shareholder are known as dividend and earning that kept in the organization are known as retained earnings. Dividend policy determines the division of earning between payments to stockholders and reinvested in the firm. Therefore the decision regarding how much to distributed to the shareholders and how much to keep in the organization is dividend policy.

Commercial banking in Nepal commenced in a formal manner in 1973 with the establishment of Nepal Bank Ltd from that day forward banking in Nepal has taken many studies forward with a myriad of banks an multitude of financial products entering the market. The entry of joint venture banks in the county opened the doors to international standard banking services and with it heightened customer expectations.

"Dividend policy is a crucial and integral part of financial management. Earnings, which are distributed to the shareholders, are called dividends. It may be in cash, share and

securities or combination of them. A dividend refers to that portion of firm's net earnings, which are paid out to the shareholder" *(Khan and Jain; 1992:543)*

"The issue of how much a company should pay stockholders as dividend is one that has concerned managers for long time. It has often been pointed out that a company that distributes its dividends often experiences an increase in its stock price. This seems to suggest that dividend do matter in that they affect stock price. But, this casual relationship has been refused by several researchers on the grounds that dividends per share do not affect stock price, rather it is informational content of dividends that affect stock prices." *(Rao; 1992:448)*

"The important aspect of dividend policy is to determine the division of earnings into dividend to the shareholders and retention for ploughing back to the company. Dividend policy determines the divisions of earnings between payments to stockholders and re-investment in firm". *(Weston and Brigham; 1972:673)*

Higher dividends can directly benefit shareholders because they reduce the fee resources, which mangers can use sub-optimally. Some economists believe that management decides to pay dividends in order to reduce agency costs.

"By a dividend we mean distribution versus retention rather than making the decision of the hoc basis from period to period". *(Gorden, Pearson and William; 1912:405)*

"Whether the portion of dividend payment is larger or small, the dividend policy should be to maximize the value of shares. The objective of dividend policy should be to maximize the shareholder's value of this investment is maximized". *(Pandey; 1995: 672)*

Dividend policy of a firm has long term impact on financial structure, the flow of funds, corporate liquidity, net profit, share price and earning per share. The more the company distributes the cash dividend the lesser will be the earning available for re-investment. Whether dividend will increase value or not may depend on the profitable investment opportunities available to the firm. It is generally said that the firm should retain the earning to the extent of the firm's internal rate of return being more the cost of capital.

"Dividend policy of a firm should be to maximize the value of the shareholders wealth. The payments convey to the shareholders that the company is profitable and financially strong. The growth of the dividend with the growth of earnings of matured companies will communicate very convincing information and consequently the MPS will significantly influence". *(Pandey; 1995:689)*

"The existing literature states that the dividend policy has both relevancy and irrelevancy toward the market price fluctuation. The optimum dividend policy depends on the relation between the firm's internal rate of return 'r' and the cost of capital 'k'". *(Walter; 1966; 29)*

"M-M has argued that dividend decision will have no impact on market price; rather market price is determined by the earning power of the firm's assets". (*Miller and Modiglaini; 1961: 411)* But others are against this argument.

The major variables influencing the dividend policy of the firm are; legal rules, liquidity position, need to reply debt, restriction in debt contracts, and rate of assets expansion. Similarly, rate of profit, stability of earning, access to capital market, desire to control and the tax position of shareholder are other factor affecting the dividend policy of the firm.

Greater the perfection available in the stock market, the higher will be the relevancy of dividend policy over the market price. The cash dividend of normal firm will have a significant effect on the market price since the company is viewed as the firm of the future prospects and growth. The following framework will clear the relationship between the variables.

Dividends have number of unique advantages over alternative managerial communications. The empirical evidence confirms that alternatives are not perfect substitutes for dividends. Many empirical studies have been carried out in the developed capital market to analyze the relationship between dividend and stock price like Linter (1956), Modiglani and Miller (1961), Gordan (1962), Friend and Puckett (1964), Walter (1966), Van Horne and Mc Donald (1971), Chawla and Shirivastavan (1987). However, no conclusive relationships exist between the amount paid out as dividend and the market price of the share. There is still a controversy concerning the relationship between dividend and market price of shares.

On reviewing the various studies regarding dividend policy and market price of share the following points may be outlined:
  ➢ Dividend policies have significant on the market price of share because of the imperfection in market.
  ➢ The more the profitable investment opportunities, the lesser will be the dividend payout ratio.
  ➢ Dividend decision has an informational value.
  ➢ Dividend signals convey information without releasing sensing sensitive details that may be use to competitors.

2.1.1 Earning

Earning is the major object of any business or the organization; it is the key success factor of the organization, no one organization can completely wide out the profit maximization objective. Earning is the basic strategy in the modern firm to sustain and expansion and to meet the expansion of the actual owner. Profit concept, therefore, occupies the main importance in the managerial decision-making. Because of uncertainty in the business entrepreneur hopes for earning or bearing of risk of compensated by means of earning. The profit results from favorable movements of general price-led. Greater the degree of monopoly power, the greater the profit made by the entrepreneur.

In anyway the people discussed about the earnings, there is no doubt that profits are residual income left after the payment of the contractual rewards to other factors of productions.

Forms of Earnings

Security analysis and the earnings are the integral parts of therefore, first there should be clear in the forms and concept of the earnings. Earnings broadly can be divided into two parts based on economists' and accountants' views:

    i.   Accounting Earnings
    j.   Economic Earnings

i. Accounting Earnings

In corporation with management, the accountant produce on a quarterly basis, a set of financial statement for the firm that ends with a figure for the firm's accounting earning that are known as reported earning. In other words, accounting earning denotes the difference between revenues and expenses, including none equity expenses such as debt. This difference is divided by number of shares outstanding to calculate earning per share (EPS). It may also be divided by the book value per share to calculate the return on equity (ROE).

A basic principle of accounting makes the break value of firm's equity at the end of period equal to; its value at the previous periods, plus "The portion of accounting earnings for the periods i.e. retained by the firm, on the assumption that there has no change in the numbers of share outstanding during the periods". *(Sharpe and Baily; 2000:10)*

Letting 'Bt' denotes the ending book value of the equity of the firm at the end of the period 't', 'E_q' denotes the accounting earnings for the period 't' and 'D_t' denotes the

dividend paid during the period 't' and 't-1' denotes the beginning value of the equity, this relationship can be expressed algebraically as following:

$$E_q = B_t - B_{t-1} + D_t$$

ii. Economic Earnings

Symbolically, economic earning is represented by 'Et', which may be defined as the amount that would be obtain in the above equation if the change in the book value of the firm equaled the change in the economic value of the firm.

$$Et_a^e = V_t - V_{t-1} + D_t$$

Hence, the change in the economic value of the firm during the period t, $V_t - V_{t-1}$ is defined as the change in the market value of the firms' common stock assuming that there is no change in the market value of the firms' other securities. Economic value can be pronounced as market value also. It is sometimes contended that the investors estimate the value of the firms' common stock by directly applying the formula to the firm's current and past accounting earnings. This is permissible since the generally accepted accounting principle set by the regulatory authorities allows a large amount of discretion in how certain items are accounted for.

As a result management may pressure accounts to user those principles that maximized the firms value or a level of reported earnings or that result in high growth rate of reported earnings or that smooth earning by reducing the year to year variability of earnings around a growth rate. Some of these activities can be continued for the limited years whereas other for periods or unlimited periods. Permanent and transitory components of earnings:

a) Permanent Component

The permanent component is the component that is to be reported in the future.

b) Transitory Component

It is the component, which is not likely to be reported in the future.

It is said that intrinsic value of the stock depends on the firms' future earning prospects. This suggests that change in stocks' intrinsic value and in turn its price, will be correlatd with change in the permanent components of its earning but not with chages in the transitory component. If the transitory component is positive, the price earning ratio would be relative low due to a relatively large number in dominator and vice versa. Considering the following relationships can the same things:

$$Price - Earning\ Ratio = \frac{MPS}{EPS}$$

Reported Earnings= Permanent Component Transitory Component

The transitory component is negative, the earnings price per the share relatively low, and as a result, price earnings ratio will be relatively large. The permanent components of earnings will change over time, which compels the investors to revise their forecast. This will lead to a change in firms' stock, in turn, its price earning ratio. But the transitory components of the earnings have greater impact on price earning ratio because the value of transitory components may be positive or negative.

2.1.2 Dividend

 "Dividend is the periodic payment made to stockholders to compensate them for their wealth and investment funds. Dividends are pro-rata distributions to shareholders retained earnings. They can be in the form of cash, stock or property. Generally, corporation can only declare dividends out of earnings, although some states laws and corporate agreements permit to declaration dividends forms sources rather than earnings". *(Hawkins; 1997:650)*

In fact, dividend is the portion of the net earnings, which is distributed to the shareholders by a company. After successfully completing the business activities of a company, if the financial statement of it shows the net profit, the Board of Directors (BOD) decides to declare dividend to stockholders. Therefore, the payment of corporate dividend is at the discretion of the BOD. Most of the companies pay dividend quarterly. There are fundamental theories regarding to dividend:

➢ **Residual Theory**

➢ **Wealth Maximization Theory**

Residual Theory

Residual theory is that, in which the first priority is given to the profitable investment opportunities. If there are profitable opportunities have been undertaken". (Lawrence; 1988:618) Using this approach the firm would treat the dividend decision in three steps as follows:

 Step-1

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

Step-2

Using the optimal capital structure proportion, it would estimate the total amount of equity financing needed to support the expenditures generated in step-1.

Step-3

Because of cost of retained earnings, Ke, is less than the cost of new common stocks, Ks, retained earnings would be use to meet the equity requirement determined in step-2.

If retained earnings are inadequate to meet this need, new common stock would be issued. If retained earnings are in excess to this need, the surplus amount would be distributed as dividends.

Wealth Maximization Theory

Under wealth maximization theory, larger dividend is announced and distributed to shareholders. Basically, it is applicable for those companies, which are just established, and to those companies it will be beneficial whose financial profits are in decreasing trends. The main purpose of the wealth maximization theory of dividend is to make assurance to the stockholders that company has better market value and good future.

2.1.2 Form of Dividends

Dividends can be distributed in different forms regarding the corporate dividend policy and attitude to the directors. The types of dividend that corporations follow is partly a matter of attitude of directors and partly a matter of shareholder's preferences, and also depending on the various circumstance and financial constraints that bound corporate plan and policies. Dividend may be distributed in different form as enumerated below:

Cash Dividend

Distribution of dividend in cash out of the earnings generated is called cash dividend. Cash dividend reduces the retained earning. Such dividend enhances liquidity in corporation. "The market price of the share drops in most cases by the amount of cash dividend distributed". (*Has ting; 1996:370*)

Generally, stockholders have strong preference for cash dividend. Both the total assets and net worth of the company are reduced by same amount, when the cash dividend is announced or distributed. Moreover, the share price will fall (or may not) after the cash dividend. Therefore, the need is that, the firm should have sufficient fund for the distribution of the cash dividend among shareholders or of the firm does not have sufficient fund for the distribution; it should borrow from any source. Cash dividend has the psychological value for stockholders. Each and everyone like to collect their return in

cash rather than non- cash means. So cash dividend is not only a way of perception improvement in the capital market.

Stock Dividend

Stock dividend is the payment of additional shares to the existing shareholders often used in place of or in additional cash dividend *(Van Horn; 2000:328)*.Stock dividend is known as bonus shares too. An issue of bonus share represents a distribution of shares in addition to the cash dividend (known as stock dividend in U.S.A.) the existing shareholders. *(Pandey; 1995:705)*

"Stock dividend becomes supplement to cash dividend. A stock dividend simply is the payment of additional stock to shareholders nothing more than a recapitalization of the company; a stockholder's proportional ownership remains unchanged". *(Van Horn; 2000: 334)* "A stock dividend is paid in additional shares of the stock instead of in cash and simply involves a book keeping transfer from retained earning to stock accounts" (Weston and Copeland; 1991: 680). In any case, the concern of the management is the positive effect on the stock price. The stock dividend must not be issued if it causes the stock price decline. The effect of the stock dividend can be outlined into the following points:

➢ The issue of stock dividend increases the number of the outstanding shares.

➢ The issue of stock dividend transfer retained earnings to the capital amount.

➢ The net worth and the par value of the company do not change with the issue of stock dividend.

➢ The issue of the stock dividend does not affect the stockholders proportional ownership.

➢ The earning per share (EPS) will decrease if the total profit does not increase.

Bond Dividend

It is the bond distribution to the stockholders in the form of bond. The main policy and objective of such dividend is to postpone the payment of cash. It has fixed maturity period. Therefore the intention and purpose of bond dividend is also the postponement of dividend payment for sometime. The only difference between bond and scrip dividend and scrip dividend is that bond carries relative longer maturity period than scrip dividend.

Scrip dividend

Scrip dividend is the payment of dividend in scrip or promissory notes. Because of temporary cash shortage, sometimes the firm needs cash generated by business earnings

to meet the different requirements. For those requisites, scrip dividend is issued promising the payment will be made in future. The script has the definite maturity period and may be of either interest bearing or not. But in financial practice it is relative scare.

Property Dividend

If the company pays the dividend pays the dividend in the form of assets to its stockholders other than the cash is known as property dividend. In this practice, assets, which are superfluous for the company, are distributed as dividend to the stockholders, and in some cases the company pays (as dividend) the subsidiary company's shares. But the shares have to be owned by the company. Property dividends are also least used practice and used when extra ordinary circumstances exist.

Even though this type of dividend is paid in the extra ordinary situation, it is less attractive in the point of view of the investors in any cases. Similarly the payment of the subsidiary company's shares in place of cash dividend could result the negative impact of 'this is not better than that'. The shareholder may feel the shares that are paid to them as of less value therefore they are paid.

Stock Repurchases

"Share repurchase is a process of purchasing back the shares by the corporation itself. A company repurchase of its own stock should be treated as a dividend decision when a firm has funds in excess of present and future investments needs" *(Van Horn; 2000:343).* Such buy back of shares cause as increase in the price of remaining shares.

In the developed capital market, corporations are allowed to buy back share for better use of unused cash. However, Nepalese company act 1997, sec 47 has prohibited companies from purchase of its own shares. It states that no company shall purchase its own shares or supply loans against the security of its own shares.

Stock is repurchased specially when the firm has abnormally high profits and is not in a position to effectively utilize surplus. By repurchasing stocks, the remaining stockholders receive future benefits instead of current high dividend.

The point to be noted whether the benefits of repurchase out weights the portion of profits the remaining stockholders are to give up for repurchasing stocks.

Stock Split

"With the stock split, the number of shares is increased through a proportional reduction in the par value of the stock" (*Van Horne; 2000:328*). The split increase the number of shares outstanding." 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". (*Van Horne; 2000:328*)

An analysis of all the benefits and cost of stock dividends depicts the net effect on the value of stock, and provides a basis to issue or issue not to issue stock dividend. In stock split there is no change in the capital account: instead a large numbers of the shares of the common stock is 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 similarly changed *(Pradhan; 1992:384).*

Practically accepted behavior of the dividend and split holds some differences. The New York Stock Exchange consider, any distribution of the stock totaling less than 25% of outstanding stock to be a stock dividend and any distribution of 25% or more a stock split. A stock split will have following effects:

- ➢ A stock split increases the number of outstanding stocks,

- ➢ It increases the par value and market price of the stock,

- ➢ It does not change the proportional ownership of stockholders,

- ➢ It does not change the capital account or the net worth of the company and

- ➢ Unless the totaling is increased, the stock split causes a dilution of EPS.

"Decision regarding the stock split depends on the expected increase in the price earning (P/E) ratio and the stock value. What matters is the increase in the stock price as result of the decision" *(Pradhan; 1992: 385).*

"The accounting treatment portrayed holds for what is known as small percentage. Stock dividends are usually a distribution of 20% or less of the number of common shares already outstanding. Because larger common stock dividends will materially reduce share price, the accounting authorities usually require that capitalization change be in terms of the par value of the additional share issued" *(Van Horn; 2000: 333).*

Practically if the stock dividend is issued, the par value remains constant. In case of stock split the par value of the shares does not remain constant, therefore the common stock, pain-in –capital and retained earnings account also remains same. Except in accounting treatment, the stock dividend and stock split are very similar. A stock split however is usually reversed for occasions, when a company wishes to achieve a substantial reduction in the market price per share.

"A stock dividend pays additional stock to stockholders. Theoretically, it is not a thing of value to the stockholders unless cash dividends per share remain unchanged or are increased. Stock dividends may serve to keep the market price per share is stock split.

Both stock dividends and stock split appear to have informational or signaling effect. When other things are held constant, share price tends to rise around the time of announcement, consistent with the positive signal". *(Van Horn; 2000: 328)*

"The integral part of dividend policy of firm is the use of bonus shares and the stock splits. Both involves issuing new shares on a pro-rata basis to the current shareholders while the firm assets, its earning, the risk bearing assumed and the investor percentage ownership in the company remain unchanged. The only definite results from either bonus share or share split are the increase in the number of shares outstanding". *(Khan and Jain; 1992: 588)*

In the practice, it is observed that the immediately after the announcement of bonus issue, the market price of the company changes depending on the investor' expectations. Sometimes a sharp decline in the share price may be observed if the bonus issue falls short of the investors' expectations.

"It may be emphasized that the market value of share may improve as the result of bonus issue if is followed by increased dividend in the immediate future. If the dividends do not increase, it is likely that the market price may fall". *(Gupta; 1973:7)*

2.1.4 Dividend Policy

"Dividend policy determines the division of earnings between payments to stockholders and reinvestment in the firm. Retained earnings are one of the most significant sources of funds for financing corporate group, but dividends constitute the cash flow that accrues to shareholders". *(Weston and Copland; 1991: 657)*

The important decision of the firm is its dividend policy decision; the percentage of earnings pays in cash to its stockholders. Dividend payout reduces the amount of retains in the firm and affects the total amount of internal financing." The dividend payout ratio obviously depends on the way earnings are measured for each of exposition, we use account net earnings. In practice, net earning may not confirm and may not be an appropriate major of the ability of firm to pay dividends". *(Van Horn; 2000:305)*

Dividend policy refers to he issue of how much the total profit a firm should pay to its stockholders and how much to retain for investment. The dividend policy however, not only specifies the amount of dividend but also form of dividend payment procedure etc.

In general, dividend policy is concern with the following matters (Pradhan; 1992:376).

➢ On the basis of policy outlined, determine the amount of dividend to be paid.

➢ Form of dividend either cash or stock dividend.

- ➢ Payment procedure

- ➢ Stock repurchase or stock splits

2.1.4.1 Stable Dividend Policy

When a firm pays a fixed amount of dividend and maintains it for all time to come regardless of fluctuation in the level of its earnings, it is called a stable dividend policy. In this dividend policy, the dividend will pay regularly. "A constant dividend policy is likely to enhance the share price by satisfying the firm's client and by providing consistently positive signal about the future earnings prospects. This policy is applicable in the firm having stable and regular income. But this policy doesn't refer to fix income every year or periods. It can be changed proportionately with change in firms' earning. This policy has three forms as follows:

a) Stable Dividend Per Share

When a firm pays a fixed amount of dividend per share over the year and does not change it with fluctuations in the level of earnings is called stable dividend policy. This is the most popular dividend policy, which pays a regular steady dividend. This policy is completely rational policy and poses the strategic financial management. Therefore, it is related to the company's ability to pay dividends.

b) Stable Payout Ratio

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

c) Low Regular Dividends plus Extras

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

2.1.4.2 No Immediate Dividend Policy

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

- ➢ When the firm is new and rapidly growing concern, which needs tidy amounts of funds to finance its expansion program,

- ➢ When the firm has difficulties to access capital market,

- ➢ When availability of funds is costlier,

- ➢ When stockholders are agree to accept higher return in future.

Normally in this policy, firm wants to issue bonus shares.

2.1.4.3 Regular Stock Dividend Policy

If the company regularly pays dividends to the stockholder in terms of stock instead of cash, then it is called regular stock dividend policy. Regular stock dividend policy is also designated as bonus shares. Such policy should follow under the following circumstances:

- ➢ When firm needs more cash for its modernization and expansion.

- ➢ When the firm is deficit in cash despite high earnings, this is particularly true when the firm's sale is affected through credit and entire sales proceeds are tied in receivables.

2.1.4.4 Irregular Pay Dividend Policy

In this policy the firm does not pay any fixed amount of dividend every year or dividend varied in correspondence with change in level of earnings, i.e. higher earnings means higher dividend and vice-versa. The firm with unstable earnings adopts this policy. If there is investment opportunity then the company retains more and if there is no investment opportunity, the company distributes the earnings as dividend.

2.1.5 Conflicting Theories of Dividend

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

theorists of this school of thought. These theorists suggest that earnings of a firm with a low payout ratio are typically capitalized at higher rates than the earnings of a high payout ratio are typically capitalized at higher rates than the earning of a high payout firm, other things held constant.

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

"Dividends are probably subject to less uncertain than capital gains, but they are taxed at a higher rate. How do these two forces balanced out? Some argue that the uncertain factor dominates; other feels that the differential tax rate is the stranger force and causes investors to favor corporate retention of earnings; still other like Miller and schools, reason that investors do not have opportunities for altering the tax effects of dividends, nor do systematic empirical studies settle the manner". *(Weston and Copland; 1991: 687)*

2.1.6 The Residual Theory of Dividend

Dividend policy can be viewed as one of the firm's investment decisions. A firm that behaves in a manner is said to believe in the residual theory of dividends. Accounting to this theory, dividend policy is a residual form investment policy. It assumes that internally generated funds are comparatively cheaper than the funds obtained external sources.

This theory is on the premise that investors prefer to have the firm retain and reinvest earnings exceeds the rate of return; the investor could himself obtain on other investments of comparable risks. The dividend under a residual dividend policy equals the amount left over from earnings, no dividends are paid. If equity investment is grater than earnings, then no dividends are paid and new shares are sold to cover any equity investment not covered by earnings. If there isn't any investment opportunity, then cent percent earnings are distributed to the shareholders. Dividend is therefore, merely a residual remaining after all equity investment needs are fulfilled.

"Although the residual theory of dividends appears to make further analysis of dividend policy unnecessary, it is indeed not clear that dividends are solely a means of disbursing exceeds funds". *(Rao; 1992:458)*

It would therefore be imprudent to conclude that there are no other implications of dividend policy and so this study shall take a closer at the relationship between dividends values.

2.1.7 Factors Influencing Dividend Policy

Dividend distribution decision is governed by a number of investing in the organization. In Nepalese commercial banks and manufacturing companies' dividend decision has become one of the challenging matters for the managers as well as the directors. The stated factors are influencing the dividend decision.

  ➢ **Legal Constraints**

  ➢ **Liquidity Position**

  ➢ **Need to Repay Debt**

  ➢ **Stability of Earnings**

  ➢ **Access to the Capital Markets**

  ➢ **Control**

  ➢ **Investment Opportunity**

  ➢ **Profit Rate**

  ➢ **Contractual Restrictions**

  ➢ **Others**

Legal Constraints

"Legal rules provide that dividends must be paid from earnings either of the current year's earnings as reflected in the balance sheet as retained earnings". (Weston and Brigham; 1972: 674-75) There are three rules of dividend payments:

  ➢ The net profit rules: Dividend can be paid from past and present earnings.

  ➢ The Capital Impairment Rules: Protect creditors by forbidding the payment of dividend from capital, rather from the invested capital.

  ➢ Insolvency Rules: Provides that the corporations cannot pay dividends while it is insolvent.

Liquidity Position

Profits held an as retained earnings, which is shown up on the right hand side of the balance sheet, are generally invested in assets for the conduct of the business. Retained earnings are not held as cash because they are already invested in plant and equipment, inventories and other assets. Therefore, even if a firm has a record of earnings, it may not

be possible to pay cash dividends because of its liquidity position. Even a growing and p profitable firm needs heavy funds. In such a situation the firm may choose another option i.e. not paying dividends.

Need to Repay Debt

If the company has maturating debt, repaying obligation the amount available for cash dividend will be low.

Stability of Earnings

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

Access to the Capital Markets

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

Control

For many small and large firms maintaining becomes and important aspect. The owners of the company prefer the issue of debt rather than issue of new stock. It is just because of their desire to retain control. As a result, dividend payout ratio will be reduced and retained earnings will be increased to meet the additional capital requirement.

Investment Opportunity

Internal investment opportunity affects the dividend decision. If the firm has residual dividend policy the dividend will only ne distributed after capitalization the investment opportunities by retained earnings.

Profit Rate

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

Contractual Restrictions

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

Others

> ➢ The lack of other source of financing

> ➢ The tax position of the owner

> ➢ Rate of assets expansion

2.1.8 Role of Expected Dividend on Stock Value

This is one of the prime issues of this research. According to generally accepted theory, stock price are the present value of future cash flows streams. In other words, the capitalization of income procedure applies to common stocks as well as to bonds and other assets. What are the cash flows that corporation provide to their stockholders? What flows do the markets in fact capitalize? A number of different models have been formulated. *(Weston and Brigham; 1972: 687)* They are;

> ➢ The stream of dividends

> ➢ The stream of earnings

> ➢ The current earnings plus flows resulting from future investment opportunities, and

> ➢ The discounting of cash flows as in capital budgeting models.

In the dividend formulation, a share of common stock may be regarded as a similar to a perpetual bond or share of perpetual preferred stock and its value may be established as the present value of its stream of dividends. This is,

Value of Stock (Po) = PV of Expected future Dividend

$$= \frac{d_1}{(1+kg)_1} + \frac{d_2}{(1+kg)_2} + \dots\dots\dots\dots\dots$$

$$= \sum_{I-1}^{\infty} \frac{d_1}{(1+kg)^1}$$

> ➢ Stock values with growth

$$price = \frac{Dividend}{capitalization\ rate}$$

$$or,\ P_0 = \frac{d_1}{kg}$$

➤ Constant/ normal growth

$$P_0 = \sum_{t=1}^{\infty} \frac{d_0(1+kg)^t}{(1+kg)^t}$$

$$or,\ P_0 = \frac{d_1}{kg - g}$$

➤ Super normal growth period

Present price = PV of dividend during super normal growth period + value of stock price at the end of super normal growth period discounted back to present.

$$P_0 = \sum_{t=1}^{N} \frac{d_0(1+g_s)^t}{(1+k_s)^t} + \left(\frac{(d_n+1)}{k_s - g_n}\right)\left(\frac{1}{(1+k_s)^N}\right)$$

2.2 Legal Rules and Restrictions Regarding Dividend Policy in Nepal

Nepal Company Act is almost silent about dividend policy of corporation. The responsibility to undertake required action to protect shareholders interest is given to stock exchange center by then Security Exchange Act 1983/84. However, this organization is not competent enough in protecting the shareholders interest since a board of directors plays dominant role. In many cases, long-term debt, agreement, bond indentures and preferred stock agreements contain restrictions on the maximum common stock dividend that can be paid by a firm. Such covenants are designed to protect senior claim holders from excessive withdrawals by residual owners.

In additional to covenants in debt and preferred stock agreements, many countries laws place restrictions on dividend payment designed to give further protection to senior claim holders. Many countries require that dividend should be paid only out of retained earnings. The effect of such a restrictions is to permit dividend payments only when a retain earning is a positive figure. A few countries permit dividends if current earnings

usually over the most recent 12 months are positive, even though total cumulative retained is negative.

2.2.1 Legal Rules and Restrictions Regarding Dividend Policy in Nepal

Company ordinance 2005 has made some legal provisions for dividend payment which are spiced below:

Section 179:

(1) Bonus shares may be issued by a company to its shareholders out of the amount available for the distribution of dividend after adopting a special resolution to this effect in the general meeting.
(2) The company shall the office before issuing bonus shares under subsection (1).

Section 182: Dividends and subsection of this section are as follows:

(1) Except in the following circumstances, the dividend shall be distributed to the shareholders within 45 days from the date of resolution approving the payment of dividend.
   - I.   If any law has prohibited the disbursement of dividends.
   - II.   If the right to receive the dividends is subject to any dispute.
   - III. If the dividends can not be disbursed within the said period due to any event beyond the control of the company or any other reason.

(2) A company wholly or partially owed by Government of Nepal shall distribute dividend only with prior approval of Government of Nepal and Government of Nepal may issue necessary directives in relation to distribution of such dividend.

(3) If Dividend is not paid within the period stipulated in sub section (1) the same shall be paid together with the interest at the rate as prescribed.

(4) The shareholder in whose name the share is registered in the shareholder register at the time of declaration of the dividend or his successor shall be entitled for the payment of the dividend.

(5) A company shall not pay or distribute dividend except from profit allocated for the purpose.

(6) A company shall eliminate pre-incorporation expenses, deduct the amount of depreciation as per the accounting standard prescribed by the competent authority under the law in force and eliminate the accumulated loss in the preceding years before the payment or distribution of dividend out of the profit in a particular

year. Provided that a company which is required to transfer any amount of the profit to certain reserve fund under law dividend shall not be distributed unless such amount is transferred to reserve fund.

(7) Subject to the provision made in this section the board of directors of company may distribute interim dividend out of the profit of previous year in the following conditions.

   (a) If there is provision in the articles of association of interim dividend.
   (b) If the board of directors has approved the annual financial statement certified by the auditor for the relevant financial year on which interim dividend shall be distributed out of the profit.

(8) A company shall not make payment or distribute any benefit in cash or kind to its shareholders except in the form of dividend approved by the general meeting.

(9) The dividend which remains unclaimed for more than five years after its declaration shall be transferred to investors' protection fund established under section 183.

(10) A company shall, while depositing unclaimed dividend pursuant to sub-section (9). In the fund establish under section 183, publish a notice in a national daily newspaper giving at least one month notice to collect the unclaimed dividend at least one month prior to the expiry as mentioned in sub-section(9).

(11) A company shall create a separate account for depositing the amount of dividend within 45 days of its declaration and shall distribute the dividend from such account and shall not utilize such amount for any other purpose.

2.3 Review of Related Studies

In this section of this chapter an attempt is made to review the various studies of past researchers relating to the dividend policy and market price of shares in financial market under three sub-divisions.

2.3.1 Review of major International studies

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

There is always the critical or confused question, whether dividend policy affect the market value of the shares or not. To highlight in this matter different studies made by different international scholars and researcher should be overviewed. Therefore some of the main researchers are going to be discussed further:

Modigliani and Miller (1961), conducted a study on "*Dividend policy, Growth and the Valuation of Shares*". This is popular known as MM approach. It is sometimes termed as Dividend Irrelevance Model.

Modigliani and Miller study (MM Hypothesis) on the favor of irrelevant of dividend is the major and important study, which argues that dividend policy is strictly a financial decision on which whether dividend are paid out of profits or earnings are retained, will depend upon the available investment opportunities. In another words, if a firm can earn a return ® higher than its cost of capital (k) it will retain the earning to finance investment projects. If retained earnings fall short of the total funds required (r>k) it will raise external funds to make up the short fall. Irrelevant theory argues that the investors are indifferent dividends and capital gains.

MM Hypothesis supports irrelevance of dividends. MM Hypothesis maintains that dividend policy has no effect on the share price of the firm, so not on the wealth of shareholders. MM argues that the value of firm is determined by the earning power of firm's assets or its investment policy and that the manner in which the earnings stream is split between dividends and retained earnings do not affect the value.

The MM Hypothesis is based on the arbitrage process of distributing the earnings to the shareholders as dividend and raises an equal amount externally through the sale of new shares for the purpose. The effect of dividend payment is exactly replaced by the effect of raising additional shares capital. The MM Hypothesis is based on the following assumptions:

1. Perfect Capital Markets is which all investors are rational. Information available to all at no cast, instantaneous transaction without cost, infinitely divisible, securities and no investor large enough to affect the market price of a security; there are not flotation costs.
2. The word of no taxes. In other words, there are not differences in tax rates applicable to capital gains and dividends.
3. A firm has a given investment policy which does not change.
4. There is perfect certain by ever investor as to future investments and profits of the firm (MM drop this assumption later)

Within the limit of the given assumption MM Hypothesis can be presented as in the following formula.

$$nP_0 = \frac{(n + \Pi n)(P_1 - I)}{(1 + K_e)}$$

Where,
n= the number of shares of record at time 0.
Πn= The number of new shares sold at time 1 at price P_1.
P_0= Market price per share at time 0.
P_1= Market price per share at time 1.
I= Total new investment during period I.
E= Total new profit of firm for the period.
K_e= Capitalization rate for firm in the risk class (it is constant through the time)
nP_0= Market price of share or total value of shares.

Lastly MM concluded that dividend does not directly appear in the above expression and $(n+\Pi n)$ P_1, I, E and K_e are assumed to be independent of dividend. MM conclude that the value of the form is independent of its dividend decision. The firm would be indifferent to whether investment opportunities were financed with debt, retained earnings, or a common stock issued.

It does not seem so relevant to apply MM approach in Nepalese context because when we apply this approach, the assumptions supposed by MM are significantly deviated. In Nepal, we are unable to find the rational as well as prefect capital market, which are considered by MM. It does not seem so sound to neglect the flotation cost, transaction cost and tax effect on capital gain as neglected by MM. Arbitrage arguments as explained by MM applies only when there are very sensitive investors and which are lacking in Nepal. A conscious investor always finds different between dividend and retained earning, and generally, Nepalese investor also prefer dividends more than retained earnings, when dividend is distributed. Thus, MM proposition is not relevant in the cause of Nepal.

Gordon (1962), conducted a study on "The Investment Financing and Valuation of the Corporation". This model also opines that the dividend policy has effect over the value of a firm. Gordon Model argues further that the return on investment of a firm is equal t the capitalization rate (i.e. r=k). The rational investors can reasonably be expected to prefer current dividend that retained the earnings in the firm. Investors evaluate the retained earnings as a risky promise because future dividend is uncertain with respect to the amount and timing. Therefore the market price of the shares would be adversely affected

when the earnings are retained. In fact, investors would be adversely to pay a higher price for shares on which dividends are paid.

The Gordon's Model is based on the following assumptions:
  i.   The firm is an all firm. (no external financing is used as retained earning is used for all the financing to be done for investment)
  ii. The rate of return (r) and cost of capital (k) remains constant for the firm.
  iii. The firm has perpetual life.
  iv. There is no tax on corporate income.
  v.   The retention ratio, once decided, remains constant and thus, the growth rate (g) of the company also remains constant since g=b×r.
  vi. The cost of capital (k) of the firm should always be greater than the growth rate (g) of the firm i.e. K>g or K>br.

According to the Gordon Model, the market value of a share of equal to the present value of future streams of dividends. A simplified formula for Gordon's Model can be symbolically expressed as:

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

Where,

P= Price of shares
E= Earning per share or percentage of earnings retained
1-b= D/P ratio, i.e. percentage of earning distributed as dividends
K= Capitalization rate/Cost of Capital
br= g= Growth rate in r, i.e. rate of return on investment of all equity firms.

Gordon, thus, argues that the dividend decision had effect on the market price of the share. The market price of the share is favorably affected with more retention when r>K. Most retentions lead to decline in market price when r<K. Retention does not affect the market price of the share when r=k.

The conclusion of this study is that investors have a strong preference for present dividends to future capital gains under the condition of uncertainty. It is assumed that current dividend is less risky than the expected capital gain. His argument stresses than an increases in dividend payout ratio leads to increases in the stock price for the reason that investors consider the dividend yield (D_1/P_o) is less risky than the expected capital gain.

Gordon's model is also described as "a bird in hand argument". It supports the argument that is popularly known as a bird in hand is worth two in the bush. What is available at present is preferable than what may be available in the future. That is to say current dividends are considered certain and riskless. So, rational investors as compared to deferred dividend prefer it in future. The future is uncertain. The investors would naturally like to avoid uncertainly. So the current dividends are given more weight than expected future dividend by the investors. So the value per share increases if dividend payout ratio is increasing. This means there exist positive relationship between the amount of dividend and stock prices. Van Horn and Mc-Donald, (1968), conducted a most comprehensive study on *"Dividend Policy and New Equity Financing"*. The purpose of this study was to investigate the combined effect of dividend policy and new equity financing decision on the market value of the firm's common stocks.

Empirical rests are performed with year-end 1968 cross sectors for two industries, using a well-known valuation model. For there investigation, they employed two samples of firm viz. the 86 electric utility data tape; and 39 companies in the electronics and electric component industries as listed on the COMPUSTAT industrial data tape in 1968.

They performed empirical study by testing two regressions for electric utilities and one regression model for electronics and electric companies industry.

They concluded that for electric utility firms in 1968, share value was not adversely effected by new equity financing in the presence of cash dividends, except for those firms in the highest new issue group and it made new equity a more costly form of financing than the retention of earnings.

They also indicated that the "Cost" disadvantages of new equity issues relatives to retained earnings widens as relatively large amounts of new equity are raised, so that the payment of dividends through excessive equity financing reduces share prices. For form in the electronics-electric component industry, a significant relationship between new equity financing and value was not demonstrated.

Watt, (1976), developed another popular and important model rated with dividend on "*Comments on the Information Contents of Dividends*". It is some how disagreed by Micheas Laub. He disagrees with Watt's specification of an annual dividend model instead of quarterly dividend model and with his conclusion that information content of dividend is trivial.

Laub placed his views by "Reinterpretation of Watt's study" and gave some empirical evidences for his argument. But Watt denied Laub's views and for the said, neither his (

Laub's) evidence nor "Re-interpretation" indicates the superiority of a quarterly dividend model or the non-triviality of the information contents in dividend. It means the specification of the dividend earning relationship is important and the result of any dividend information content study depends crucially on the approach used.

Watt's interpretation

Watt in his own way had interpreted quarterly versus annual dividend model and ads:

➢ The accountants tend to base their accounting procedures for the calculation of the earnings on 1- year periods.
➢ The quarterly earnings often include in their calculations simple extrapolation of many of the preceding year's expenses.
➢ As a consequence, an expectation of future annual earning based on quarterly earnings may be less efficient than such an expectation base annual earnings which that extrapolation is absent.

Therefore, it is the case; management may prefer to wait for the determination of annual earnings before changing regular dividends.

In regards to quarterly earnings, he further arise a problem. The problem is that: there may be a seasonal component in those earnings and in order to interpret any change in quarterly earnings, an estimate must be made of seasonal component. It may encourage management to wait for annual earnings to determine whether to change dividends.

Watt points out; two third of the regular dividend changes and nine tenth of the extra dividend declaration occur in the first and last quarter which gives the evidence of management for annual dividend rather than quarterly model of Laub. Therefore, according to Watt, if Laub's dispute were valid, it would not affect stock prices tests. Watt said in conclusion, nothing would cause Watt to change the conclusion of his paper.

Michaely, Thaler and Womack (1995), conducted a study on "*Price Reaction to Dividend Initiations and Omissions*". They investigated the immediate and long-term effects dividend initiation and omission announcements. They found that the Short-run price impact of dividend omissions was negative and that of initiations was positive. Initiation reactions were about one half the magnitude of the market reaction to omission announcements. They change in yield, however, was about seven times larger for the omission announcements. They saw that the market reaction to a dividend omission announcement was no greater than to an initiation for a given change yield.

Walter (1996) conducted a study on "*Dividend policy and its Influence on the Value of the Enterprise*". He proposed a model for share valuation.

According to him, dividend policy can affect the values of a firm through investor's performance. So, the dividends are relevant. The investment policy of a firm cannot be separated from its dividend policy; they both are related to each other. The choice is appropriate dividend policy affects the value of an enterprise. According to him, if the return on investments(r) is greater than the cost of capital (K), the firm should retain the earnings where it should distribute the earnings to the shareholder in case the required rate of return (K) is greater than expected return (r) on the firm's investment. The market value of the share will be affected by the dividend payout and retention of earnings. So, his study shows clearly the importance of the relationship between internal rate of return (r) and its cost of capital (k) in determining the dividend policy.

The Walter's model is based on the following assumptions:

1) All financing is done through retained earnings: external sources of funds like debt or new equity capital are not used.
2) The firm's business risk does not change for additional investment. It means, internal rate of return (r) and cost of capital (k) are constant.
3) The value of earning pre share (EPS) and dividend per share (DPS) remains constant. But, the value of DPS and EPS may be changed in the model to determine results.
4) The firm has perpetual life.

Walter gives the following formula to calculate the Market Price of a Share:

$$P = \frac{D + \frac{r}{k}(E - D)}{(K)}$$

Where,
P= the prevailing market price of a share
D= dividend per share
E= earning per share
r= internal rate of capital
r(E-D)= Earning retained at rate r

$\frac{r}{k}(E - D) = $ Present value of retained ernings within firm for a period

To show the effect of dividend policy on the market value of the share, Walter has identified three types of firms.

(i) Growth firm (r>k)

When the firm is able to earn a return on investments greater than the required rate ofreturn (r>K) the firm is known as growth firm. So, firm's having r>K are referred as growth firms which are able to reinvest earnings at a rate which is higher than the rate expected by shareholders. They will maximize the value per share if they follow a policy of retaining all earnings for internal investment. Thus the correlation between dividend and stock price is negative, and the optimum payout ratio for a growth firm is zero. In growth firm the value of shares is inversely related to the D/P ratio i.e. as the payout ratio increases. The market value of share declines.

(ii) Normal firm (r=k)

If the internal rate of return is equal to cost of capital, the dividend policy does not affect the value of share, i.e. dividends are indifferent from stock prices such as firm can be called as a normal firm. Whether the earnings are retained or distributed as dividend, it is a matter of indifference for a normal firm. In this condition, the market price of shares is not affected by the D/P ratio, it will remain constant for different dividend payout ratio from zero to hundred. Thus there is no unique optimum payout ratio for a normal firm. One dividend policy is good as other and the MPS is not affected by the payout ratio when r=k.

(ii) Declining firm(r<k)

When internal rate of return (r) is less than cost of capital (k), this kind of firm is called declining firm. If a firm does not have profitable investment opportunities, the shareholders will be better of if earnings are paid out to them, so as to enable them to earn a higher return by using the funds elsewhere. This kind of firm is called declining firm. In this firm, the D/P ratio, and the value of share are positively correlated, i.e. as payout increases, the market price of the shares also increases.

Criticism of Walter's Model
No external financing

This is based on assumption that the investment opportunities of the firm are financed by retained earnings finance the investment opportunities of the firm only on external financing i.e. debt or equity is used for the purpose. When such a situation exist either the firm's investment or its dividend policy or both will be sub-optimum.

Constant Rate of Return (r) and Opportunity Cost of Capital (k)

This model assumes that rate of return (r) and opportunity cost of capital (k) is constant. In fact, rate of return (r) changes with increase and decrease of investment, i.e. decreases

as more investment occurs and cost of capital (k) changes directly with the risk borne by the firms.

Lamont (1998) conducted a study on *"Earning and Expected Return"*. It shows that the aggregate dividend payout ratio forecast excess return on both stocks and corporate bonds. It is to mean, high dividends forecast high return and high earnings forecast low return. The correlation of earnings with business conditions gives them predicated power of returns; they contained information about future returns that is not captured by other variables. Dividend and earning contribute explanation power at short horizon but however for long horizon stock price matters. There are two reasons, why the payout ratios forecast return i.e.

> ➢ The payout ratio forecasts returns because the level of dividends forecasts return. High dividend predicts high future return.
> ➢ The payout ratio forecasts return because the level of earnings forecasts returns.

Conclusion of the Study

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

i. Dividend contains information about future returns because they help measure the value of future dividends while earnings contain information because they are corrected business conditions.
ii. Both high current prices and high current earnings forecast low future returns.
iii. Using earnig yield alone to forecast return is a bad idea.
iv. High dividend forecast high future return so using dividend yield alone to forecast return are more successful.
v. Dividend price by any smooth accounting variable capturing normal growth produces roughly the same forecasting variables.

2.3.2 Review of Journals and Articles

Shiller, (1981) published an article on *"Do stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends"?* He used two set of data for standard and poor series and 30 stocks from Dow Jones Industrial Average. He used the sample efficient market model to justify that the change in dividend how far causes the moment of prices.

$$P_t = \sum_{k=0}^{\infty} r^{k+1} \quad E_t D_{k+1} \qquad 0 < r < 1$$

Where,

D_t = Real dividend paid at the end of time

E_t = Mathematical expectation condition on information available at time.

R= Constant real discount factor.

K= Discount factor

He has seen that measure of stock price volatility over the past century appear to be far too high five to thirteen times to be attributed to new information about future real dividend if, uncertainty about future dividends is measured by simple standard deviation of real dividends around their long run exponential growth path. He concluded that, since the market did not know in advance with certainly the growth path and distribution of dividends that was ultimately observed, however one can not possible major events which did not occur such an explanation of volatility of stock price however is academic in that it relies fundamentally on unobservable and can not be evaluated statistically.

Feldstein and Green, (1983) presented a paper work on *"Why do not Corporations Eliminate their Dividends and Increase their Retained Earnings"?* Where they provide a simple model of market equilibrium to explain why firms that maximize the value of their shares pay dividends even though the funds would instead be retained and subsequently distributed to shareholders in a way that they would allow them to be taxed more favorable as capital gain.

The each firm is subjectively unique, and that both high and low tax investors will want to infest in all firms. Both proportions and portfolio investors can also borrow and that corporations as well as investors can earn the risk free returns. This study indicated that existing tax treatment of dividend distorts corporate financial decisions and may cause a misallocation of total investment. It will be important to see whether these adverse effects remain in the more general analytic framework.

Manandhar (2001) has carried out study on the topic of *"Bonus Share and Dividend Changes Empirical Analysis in Nepalese Context"* based on the data collected for the years from 1987/98. The analysis covers 35 observations per bonus dividend rate and 29 samples of the Nepalese corporate firms selected from the listed corporate firms in NEPSE. The sample corporate firms include 5 from banking, 3 from insurance and finance company and 4 from manufacturing, trading and airlines.

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

1) Is threre any assosiation between dividend rate and bonus issue?
2) Is quantum of the dividends increase directly to ratio of bonus issue?

3) Does the dividend announcement of the management indicate its intention of increasing future dividend?
4) Is the announcement of bonus share issue has a significint impact in market price of share?
5) Is there any systematic policy of dividend distribution after the issue?
6) Is there diversity in the increase in dividend rate and the total dividend payment after bonus issue?
7) Is the relationship between existing dividend and various ranges of bonus share issue ratio is not found significant in Nepalese corporate firms?

Shrestha, (1998) published an article on "A Study of Dividend Policy and Value of the Firm in Small Stock Market". In this research article following model is used:

$$Y= F(X_1, X2, X3, X_4, X_5)$$

Where,
Y= Value of a firm
X_1= DPS
X_2= EPS
X_3= P/E Ratio
X_4= Return on Equity (ROE)
X_5= Dividend Yield (D/P)

This study aimed to identify some of significant financial variables, which are significant to the value of firm. It helps to understand the dividend policy of sample companies and their effect on market value of the firm as represented by market capitalization and thus misunderstanding the relevancy and irrelevancy of dividend policy on market capitalization in stocks market in Nepal. The financial variable taken under study to understand the dividend policy followed are DPS, EPS, P/E ratio, return on equity and dividend yield. It is found that DPS, Return on equity and Dividend yield have the significant impact whereas EPS and P/E Ratio have found no significant impact on market value.

Pradhan and Adhikari, (2004), published an article on "Dividend and stock performance in Nepal" where they ascertain cross sectional differences in performance of stocks in terms of underlying behavior of dividend per share to earning per share. Pooled Cross-Sectional linear regression was computed by using a data set of 99- observation covering 33 listed companies. The findings revealed that performance of stocks paying higher dividends are comparatively better than of stocks paying lower dividends. Findings also revealed that performance is more variable for the stocks paying higher dividends.

The results of the cross-sectional analysis shows that stocks with larger ratio of DPS to book value per share have higher liquidity, lower leverage, and higher assets turnover and higher interest coverage. Similarly, stocks with a higher ratio of DPS to EPS have higher liquidity, low earnings, higher assets turnover and interest coverage. It also indicated that liquidity; assets turnover, interest coverage, leverage and earnings are more variables for the stocks paying higher dividends. Bhattarai (2005) published an article on "Split Shares to Benefit Small Investors". On this article he explained that a well performing company reflects the performance in the market price, which is beating up. Those companies whose dividend is higher price. Although, their market price per share is higher, the investors are willing to purchase their share. But, small investors cannot afford to purchase the share because the prices of these shares are prohibited. Stock split may be good solution to drop down the prices of these shares, which is affordable to small investors.

2.3.3 Review of Thesis

Rishi Raj Gautam (1998) had conducted research work on *"Dividend policy of Commercial Bank: A comparative study of NGBL, NIBL and NABIL"*. The study is based on secondary data.

His objects of the study were to identify the type of dividend followed by the banks; examine the impact of dividend on share price; identify the relationship between DPS and other financial indicators. He also specify one way to encourage risk-taking ability and performance is to have proper risk-return trade off by bank's management board in a way that higher return must be the investment rule for higher risk-takers that comprise bank's shareholders. He conducted this study also to know the uniformity among DPS, EPS and DPR of the sample companies.

His conclusion of the study had shown that, there was not clearly defined dividend policy was found followed by sample Joint Venture Commercial Banks. He did not see the market price of the share to be more or less dependent to EPS or DPS. He did not find significant relationship between DPS and other difference in DPS and DPR. In the year 1992, the bank had paid 60% (40% stock dividend and 20% cash dividend) of its profit as dividend to the shareholders to satisfy their needs and 40% of earnings was retained to retain refinance for the internal growth of the bank. However, dividend growth rate is not equal to the growth rate of earnings.

Pramesh K.C. (1991) had conducted a study on "Dividend Policy of Joint Venture Bank in Nepal", which has the objectives to provide conceptual framework of dividend models, to analyze the financial variables affecting the stock value and interpret the dividend

paying implication under dividend valuation model and to provide suggestions, which will give vision for determination and espousal of dividend policy of joint venture banks. The summary of the major findings of the study were the earning per share of all joint venture banks was raised satisfactory, there was co-relation between EPS and BVPS, amount of cash dividend had been rising each year, the P/E ratio, earning yield, divided yield percentage exposed cyclical behavior, the market value per share of joint venture banks stocks in security exchange center was significantly fluctuated and trading on high price. Joint venture banks in Nepal were seen as growth banks because actual capitalization rate (r) is higher than the normal capitalization rate (k) which is r <k. Under CAPM the beta risk of joint venture banks was less risky. Cash dividend per share (CDPS) of joint venture banks was significantly increasing in each year.

Dadi Ram Dhungana (2003) concluded a study on *"Dividend Policy of Commercial Banks and Insurance Companies"*. His objective was to highlight the aspects of dividend policies and practices of bank and insurance companies. He also analyzed the relationship of dividend with carious key such as Earning per Share (EPS), Net Profit (NP), Net Worth (NW) and stock Price. Factors affecting dividend policy of Banks and Insurance companies were also analyzed. He had provided a workable suggestion and possible guidelines to overcome various issues and gaps based on the findings of the analysis.

He had conducted his research by taking 3 Commercial Banks and 3 Insurance Companies as sample. He used both primary and secondary data. His major findings and conclusion shows, EPS and DPS of all selected companies are satisfactory except Nepal Bangladesh Bank Ltd. and Nepal Industrial and Commercial Bank Ltd. The coefficient of variation showed that Nepal Bangladesh Bank Ltd had greater fluctuations in EPS &DPS where as the Himalayan Bank Ltd and Nepal Bangladesh Bank Ltd(5% significant level). Coefficient of all the three insurance companies was positive with EPS and DPS (1% significant level). The analysis of correlation between current ratio and DPS were positive. MPS and Dividend of last year D (t-1) were positively correlated. EPS and MPS were negatively correlated. Corporation respondents gave the first priority to earnings, second to liquidity and third priority to past dividend.

Rajesh Sharma (2003), conducted a study on *"Dividend Theories and Practice; on Empirical Analysis on Joint Venture Banks of Nepal"*. He had chosen four sample banks; Standard Chartered Bank Ltd, NABIL Bank Ltd, Himalayan Bank Ltd, and Investment Bank Ltd. His objectives of the study were to find dividend procedures followed by the JVBs of Nepal in the context of Nepal. The aim of the study was also to find out ability and attitude of paying dividend and analysis of variance on the payment of dividend between banks with a similar profit range. Major factors affecting dividend policy of JVBs, legal aspects, and shareholders consideration were analyze with analyzing practices of issuing bonus shares.

After conducting the different analysis his major findings showed that the high dividend paying firms are fund to be more financially in comparison to low dividend paying firms. The MPS was affected by dividend policy while change in DPS affects the share price of different firms differently. He did not find dividend payment is as regular phenomena in Nepalese companies but still the major leading joint venture banks paying dividend (either cash or stock) regularly in order to meet the shareholder's expectation. Dividend was not seen decreased and increased with accordance to the EPS. Net Profit of the organization does not properly support the declaration of dividend. His findings also concluded that the MPS is considerably higher than the actual net worth. This huge gap clearly indicated that investors do not have adequate knowledge about the actual financial status of the company. Managers preferred smooth dividend payments by moving only part way towards the target payout on each year. They tried to look into the future when they set the payment.

Num Prasad Prasad Parajuli (2003), carried out a research on the topic *"Dividend Policies and Practices of Joint Venture Banks in Nepal; A Comparative Study of Commercial Joint Venture Banks"*.

His objectives of the study were to analyze dividend policy and practice of these banks, examine the relationship of dividend with various Factors DPS, MPS, Net Worth, net earnings and Book value off Stock. He recommended possible future guideline and to suggest to the policy makers executive and investors to overcome various issues and gaps based on the findings of the analysis.

He included the four banks as samples. His conclusion had shown that banks declare high dividend return on paid up capital. He found relationship between DPS and net earning was positive in these sample banks. He did not find uniformity in divided policy. MPS had highly fluctuated and traded on high Price on DPS affects MPS. P/E ratio and dividend yield were in consistent. He did not find stable dividend policy adopted by these banks for a long period.

Pooja Basnet (2004), conducted a study on *"Dividend Policy of Listed Companies in Nepal: A Comparative Study of Banking, Finance and Insurance Companies"*. She conducted this study to assess the prevailing practice of Nepalese listing companies regarding dividend; to highlight the prevailing dividend policy adopted by the listed companies; to assess the impact of dividend on market price of share of the selected companies. She analyzed the relationship between dividend with EPS, net profit & net worth and provides a useful workable suggestion.

Her major findings showed that, there was not uniformity of dividend distributing policy and practices in selected companies. A change in DPS and payout ratio affects the share prices differently in different companies. The relationship between DPS with EPS, net profit and net worth were positive in all sector companies.

She suggests and recommended that there must have clearly defined dividend policy, legal rules must be enacted. She suggested that Companies should have long-term vision and establish the organization to promote and protect activities in favor of investor. Further, she recommended that choice should be given to shareholders whether they prefer stock dividend or cash dividend with using target rate of earnings i.e. profit planning and target payout rates. At last, she suggested that all activities and information regarding performance should be timely provided.

2.4 Research Gap

In this study, I have taken new journals and articles from different journalists which are related to dividend policy that helps to know about dividend decision and its effect on financial indicators, relationship among them and shows a glance of actual dividend behavior in Nepal. Further, the study has taken up 6 years latest data with due consideration of EPS, DPS, DPR, MPS etc and data are different from those of previous in term of time and space. So, it has been believed that this study will be different and comprehensive as compared previous study.

CHAPTER-III

REASEARCH METHODOLOGY

Introduction

The section provides the methodology pursued to attain the objectives stated in the research. Research methodology explains the methods used in the study including presentation of the research design. Research methodology is a systematic, scientific, and planned way of collection, analysis and interpretation of data and facts to solve the research problems and accomplish the basic objective of the study. Every research should be outlined in the systematic manner and for that reason; research methodology is one of the most important parts of every research.

In fact, Research Methodology is a way to systematically solve the research problems. It refers to the various sequential to be adopted by a researcher is studying a problem with certain objects in views *(Kothari: 1978: 19).*

The basic objectives of this study are to explain, test and analysis of dividend policy and its impact on market of stock, therefore, come systematic research methodologies has been used. This study is based on secondary data but also some relevant questions would be asked to the concerning bodies for the purpose of practical study. This chapter describes the methodology employed till the entire study will be conducted.

3.1 Research Design

Research design is one of the most important elements of the thesis. It is the outline of logic of the study. The process is to go from the stated hypothesis of the problem and explain the solution or the methods of investigating the solution. Research design is the plan, structure and structure and strategy of investigation conceived so as to obtain answers to research question and to control variances *(Kirlinger; 1978:300).*

The research design basically follows the comparative evaluation of dividend policy in the sample firms and their effect on stock price. The paints are discussed basically on the basis of secondary data. Five year financial statement from 2003 to 2007 of sample firms is taken from respective firms and websites. The collected data is analyzed and interpreted with the help of financial and statistical tools.

3.2 Population and Samples

As the study is based on the data of the companies which are listed in the NEPSE, so the population is taken from only those companies which are listed in NEPSE. The various groups designed by the NEPSE, whose shares are actively traded in stock market are listed below:

1. NABIL Bank Ltd
2. Nepal Investment Bank Ltd
3. Standard Chartered Bank Ltd
4. Himalayan Bank Ltd
5. Nepal SBI Bank Ltd
6. Nepal Bangladesh Bank Ltd
7. Everest Bank Ltd.
8. Bank of Kathmandu Ltd
9. Nepal Industrial and Commercial Bank
10. Machhapuchhre Bank Ltd
11. Laxmi Bank ltd.
12. Kumari Bank Ltd
13. Lumbini Bank Ltd.
14. Nepal Credit and Commercial Bank
15. Siddartha Bank Ltd
16. NMB Bank Ltd
17. Bank of Asia Nepal Ltd
18. Citizens Bank International Ltd
19. KIST Bank Ltd
20. DCBL Bank Ltd
21. Global Bank Ltd

It is not possible to study in and about all commercial Banks' dividend policy. Therefore, five joint venture banks from the list of above banks are chosen as sample among the entire sectors (Population). The sample joint venture banks are as following:

1. Nepal SBI Bank Ltd
2. NABIL Bank Ltd.
3. Everest Bank Ltd
4. Himalayan Bank Ltd

3.3 Sources and Techniques of Data Collection

Information is life of any research. All the data collected and used are basically of secondary nature. The data and information used in this study on secondary in nature.

The secondary source of data means those that are already published before. Data are collected from different sources i.e. Nepal Stock Exchange plus the respective commercial banks' head office, SEBON, website such as www. nepalstock.com, and www. google.com etc. From these organizations annual report are collected and some related information are taken from Economic survey and People concerning and relevant to the study. For the purpose of analysis of data 5 years will be taken as sample from 2003 to 2008.

3.4 Method of Analysis and Presentation:

Specific financial and statistical tools are used in this research. The analysis of data is done according to the pattern of data available. The relationship between different variables related to study would be drown out by using financial and statistical tools. The calculated result is tabulated under different heading for the easiness to read, and then they are compared with each other to interpret the results. To study the relationship between the variables, correlation and regression analysis is conducted.

3.5 Data Analysis Tools:

For the purpose of analysis, two tools/techniques are used. They are as follows:

(A) Financial Tools

Financial tools are those, which help to study the financial strength and weakness of four Joint Venture Commercial sample Banks. The financial tools used in this study are briefly presented below:

i) Earning Per Share (EPS)

EPS is calculated to know the earning capacity and to make the comparison between the commercial banks and insurance companies according to their respective sectors. EPS defined as the result received by dividing net profit after taxes by number of common stock outstanding. In equation:

$$EPS = \frac{Net\ Profit\ After\ Tax}{No.of\ Common\ Stock\ Outstanding}$$

ii) Dividend Per Share (DPS)

DPS indicate the part of earning distributed to shareholders on per share basis and calculated by dividing the total dividend to equity shareholders by the total number of equity shares.

$$DPS = \frac{Total\ Dividend\ Paid}{No.of\ Common\ Stock\ Outstanding}$$

iii) Dividend Payout Ratio (D/P ratio)

D/P ratio is calculated to indicate percentage of the profit on share that is distributed as dividend. The following equation is solved to calculate the D/P ratio:

$$D/_P\ Ratio = \frac{Dividend\ Per\ Share\ (DPS)}{Earning\ Per\ Share\ (EPS)}$$

iv) Market Price Per Share (MPS)

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

(B) Statistical Tools

In the research, various statistical tools will be widely used. The statistical tools help to estimate the relationship between the various variables.

i) Arithmetic Mean

The sum of the observation divided by the number of observation is called arithmetic mean: it is also known as simple average. In general, let $X_1, X_2, \ldots, X_n$ are the given variables in "n" observations, then their arithmetic mean, usually denoted by $\overline{X}$ is given by:

$$\overline{X} = \frac{(x_1 + x_2 \ldots \ldots x_n)}{n}$$

Where, $\overline{X}$ denotes the mean.

$x_1, x_2, \ldots, x_n$ are given set of observation and n denotes no. of item observed.

ii) Standard Deviation (S.D.)

The measurement of the scatterness of the mass of figures in a series about an average is known as dispersion. The standard deviation means the absolute dispersion. The greater amount of dispersion, the greater will be the standard deviation. A small standard deviation means high degree of uniformity of the observation as well as homogeneity of series; a large standard deviation means just opposite. In symbol,

$$S.D = \sqrt{\frac{n\sum x^2 - (\sum x)^2}{n(n-1)}}$$

iii) The Coefficient of Variation (C.V)

Coefficient of variation is the relative measure of dispersion, comparable across, which is defined as the ratio of the standard deviation to the mean expressed in percent *(Richard and David; 1994: 114).* In symbol,

$$C.V = \frac{S.D}{\overline{X}}$$

Where,

S.D= Standard Deviation

$\overline{X}$ = Mean Average

The higher CV denotes to the higher variability of variable and vice-versa.

iv) Correlation

If two quantities vary in such a way that movement in other accompanies movements in the one, these quantities are correlated. The degree of relationship between the variables under consideration is measured through the correlation analysis. Correlation analysis only helps in determining the extent to which the two variables are correlated but it does not tell us about cause and effect relationship. Though, there is high degree of correlation between two variables one cannot say which one is the cause and which is the effect.

Of the several mathematical methods of measuring correlation the Karl Pearson's method, popularly known as Pearson's coefficient of correlation, is most widely used in practice. The Pearson Coefficient of Correlation is denoted by r. Formula for computing Pearsonian r is:

$$r = \frac{\sum xy}{N\sigma_x\sigma_y}$$

or,
$$r = \frac{\sum xy}{\sqrt{\sum x^2 \times \sum y^2}}$$

Where,

$$x = (X - \overline{X}); y = (Y - \overline{Y})$$

$_x$= Standard Deviation of Series X

$_y$= Standard Deviation of Series Y

Correlation analysis is the statistical tools that can be used to describe the degree to which one variable is linearly related to another. The coefficient of correlation measures the direction of relationship between two sets of figures. It is the square root of the correlation coefficient of determination can either be positive or it can be negative. If both variables are changing in the same direction, the correlation is said to be positive but when the variation in the two variables take place in opposite direction, the correlation is termed as negative. In this study, coefficient of correlation is calculated between stock prices and dividends, stock prices and retained earnings, stock prices and lagged earning. Since in simple correlation no factor is held constant, the simple correlation is called order correlation coefficient.

a) Probable Error

Probable error of the correlation coefficient denoted by P.E. is the measure of testing the reliability of the calculated value of the coefficient so far as it depends on the conditions of random sampling. The probable error of the coefficient of correlation is obtained as follows:

$$P.E_r = 0.6745\frac{1-r^2}{\sqrt{N}}$$

Where, r is the coefficient of correlation and N the number of pairs of observation. If the value of r is less than the P.E., there is no evidence of correlation. If the value of r is more than six times of the probable error, the coefficient of correlation is practically certain. By adding and subtracting the value of P.E from coefficient of correlation we get respectively the upper and lower limits within which coefficient of correlation in the population can be expected to lie.

The following relationships will be measured and found out using correlation:

b) Correlation between DPS and MPS

Market price of share shows the wealth of shareholders. There are two school of thought regarding to the relationship between DPS and MPS; irrelevance theory and relevance theory, which was discussed on the chapter-II. So to find out the relationship between DPS and MPS of sampled companies, the correlation coefficient is helpful. Closing market price share for the end of the years are taken for the purpose of study.

c) Correlation between DPS and NW

Net worth can be described as the total wealth of shareholder, which lay, on the asset side of balance sheet. It includes share capital and reserves. A firm increases the net worth by

different means, bonus shares, increasing in different reserves etc. Increase in Net worth is the result of increase in undistributed profit. The relationship between Net worth and DPS is normally negative. The relationship between DPS and Net Worth can be obtained by the help of correlation coefficient.

d) Correlation between MPS and EPS

EPS is described as the earning available for each share for a one year. EPS can be divided into dividend payout and retention ratio. So MPS is directly correlated to EPS and indirectly to retention ratio. If a firm has enough profit and not profitable investment opportunities, its MPS to EPS is positively correlated. But, if there are investment opportunities and the net profit fluctuates than there will be no relationship in between them.

e)Correlation between Dividend Payout and MPS

Dividend payout is the ratio between DPS and EPS. How much earnings are distributed as dividend, is shown by dividend payout ratio which is normally expressed in percentage.

f) Correlation between DPS and Liquidity

Liquidity is measured by the cash balance and bank balance with other liquid assets available on the firm. For this research, the cash and bank balance is taken as liquid assets because it is highly liquid. The firm which has high cash and bank balance has high capacity to pay cash dividend. So, there is positive relationship in between DPS and liquidity of a firm.

g) Coefficient of Determination (R^2)

The coefficient of determination is a measure of degree (extent of strength) of linear association or correlation between two variables, one of which happen to be independent and other being dependent variable. In other words, R2 measures the percentage of total variation in dependent variable explained by independent variable. The co-efficient of determination can have value ranging from zero to one. A value of one can occur only if the unexplained variation is exactly on the regression line. In this study, R2 is calculated as the requirement of the model.

h) Regression Analysis

Regression analysis is concerned with the study of the relationship between one variable called the explained or dependent variable and one or more than one variable is called independent or explanatory variables (*Richard and David; 1994:114*). There are two

types of regression analysis. One called simple linear regression analysis, which is concerned with the study of the relationship between one variable called the dependent or explained variable and one other variable called independent or explanatory variable. Next type of regression analysis is called multiple regression analysis, which is concerned with the study of relationship between one variable called the dependent or explained variable and more than one variable called the independent or explanatory variable.

In regression analysis, the dependent variable is denoted by Y and independent variable is denoted by X. The analysis used is called the simple linear regression analysis. The term "linear" means that an equation of a straight line of the form Y=a+bx.

Where a and b are constants, is used t describe the average relationship that exists between the two variables.

Regression equation of x on y

$$X = a + by$$

Where, a & b in the equation are called numerical constant. X is independent variable i. e. we can take a given value of X and compute the value of Y.Y is dependent variable i.e. we can take a given value which depends on X. If the value of the constants 'a' and 'b' are obtained, the line of regression is completely obtained.

The regression coefficient of x and y is denoted by x or b1. It is given by;

$$bxy = r\frac{\sigma_x}{\sigma_y}$$

Where,

$_x$=standard deviation of x series

$_y$=standard deviation of y series

r = correlation coefficient

So the regression equation of the x on y can be obtained as follows:

$$x - \bar{x} = byx(y - \bar{y})$$

Where,

$\bar{x}$= Mean of x series

$\bar{y}$= Mean of y series

The regression analysis submits the following two concepts:

1) Regression Constant (a)

The value of constant, which is intercept of the model, indicates the average level of dependent variable when independent (s) is (are) zero. In other words, it is better to

understand that "a" (constant) indicates the mean or average affect on dependent variable if all the variables omitted from the model.

2) Regression Coefficient (b)

The regression coefficient of each independent variable indicates the marginal relationship between that variable and value of dependent variable, holding constant the effect of all other independent variable in the regression model. In other words, the coefficients describe how changes in independent variables affect the values of dependent variable's estimate.

3) Standard Error of Estimate (SEE)

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

3.5 Test of Hypothesis

Following are some of the hypothesis that should be tested for the study:

First Hypothesis

Null Hypothesis (H_o): There is no significant different between dependent variable MPS and two independent variables EPS and DPS.

Alternative Hypothesis (H_1): There is significant different between dependent variable MPS and two independent variables EPS and DPS.

Second Hypothesis

Null Hypothesis (H_o): There is no significant different between dependent variable MPS and two independent variables DPR and DPS.

Alternative Hypothesis (H_1): There is significant different between dependent variable MPS and two independent variables DPR and DPS.

3.6 Limitation of the Methodology

The analysis on the secondary data is obtained from financial statement provided by NEPSE, through website. Unavailability of the current data with concerned banks makes this study little bit vary from the current situation of the Joint Venture banks. Because of unavailable of current data (2009) the study is only focused on the six year data analysis i.e. 2003-2008. Only secondary data are included in the study but not included the primary data. The regression analysis along with other remaining analysis of based on the pooled data form the mentioned source.

The reliability of the statistical tools used and lack of experience is primary limitation of the research work besides the dividend here has been referred only to the cash dividend. The computer model namely SPSS, has been used for statistical calculation, therefore, technical error possibly may exist with least chance.

CAHPTER-IV

DATA PRESENTATION AND ANALYSIS

To fulfill the objectives of the study mentioned in the introduction chapter several analytical tools and techniques have been presented in the research methodology chapter. All the tools and techniques mentioned in earlier chapter will become helpful to achieve the basic objective of the study and so all the concerned tools and techniques have been used on this chapter. Actually, in this chapter, the effort has been made to analyze the dividend policy of Nepalese financial institution specially JVCBs in Nepal & the attitude of management towards the optimum dividend decision. My analysis is highly support by the practices of dividend distribution by JVB. That's why researcher has taken the data of JVCB for elaboration, and to come to conclusion.

This chapter of data presentation and analysis on dividend policy of joint venture bank begins with analysis of dividend per share, earning per share, price earning ratio, dividend payout ratio, and market value per share and dividend yield analysis. These financial indicators of concerned banks are compared with the help of statistical tools viz. mean standard deviation and co-efficient of variations, which are calculated and interpreted. At last, correlation and regression analysis of some specific comments have made.

4.1 Analysis of Financial Indicators and Variables
4.1.1 Dividend Pre Share Analysis (DPS$_t$)

Table 4.1

Dividend Per Share for the year of JVCBs (DPS) (in Rs)

Year / Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	50	65	70	85	170	100	90	42.7784993	47.5316659
NSBI	8	0	0	10	60.18	0	13.03	23.5242301	180.538987
HBL	25	20	31.58	35	40	45	32.7633	9.29172033	28.360119
EBL	20	20	20	25	40	50	29.1667	12.8127541	43.9294425
Pooled Average = 41.24									

Source: Annual Reports of Commercial Banks

Fig 4.1
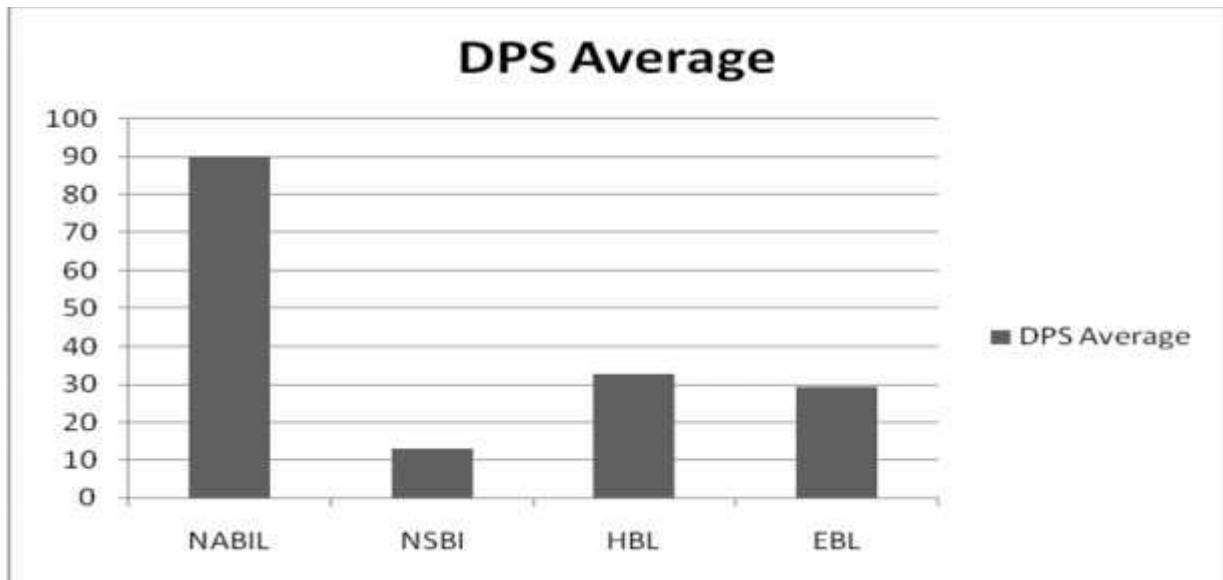
As the study topic is concerned to the dividend of the bank. I have taken the dividend paid by four banks for the six different fiscal years. So, it is very important at this stage to look over the relevant data on dividend for the purpose of my analysis. The above table (Table no. 4.1) shows the impact on dividend on share price of the concerned JVCBs from the year ended 2003-2008.

From the above table, it is noticed that NABIL, HBL, and EBL paid the dividend regularly but SBI doesn't pay the regular dividend. Average dividend per share paid by NABIL is highest amongst all, which is Rs90. The DPS of NABIL, HBL, EBL are low in the first year and then all are in increasing trend every year. Only NSBI's DPS is low the first year and then all are it increased only in the year2006 and 2007 but it is decreased to zero in 2008. Standard Deviation of DPS is highest in NABIL, i.e. 42.778 which is the absolute measurement of dispersion. A small S.D measures the high degree of uniformity of observation as small as homogeneity of a series and vice-versa. It is perfectible to state the rate of fluctuations with the help of co-efficient of variation (C.V) of above data. The C.V is highest in NSBI. DPS of these companies highly varies on their DPS payment over the time period of variation of DPS which means their DPS paid over time varies more than other companies. Therefore NABIL, HBL, & EBL paid stable dividend over the time period out of the sampled companies. The pooled average DPS of the bank is Rs 41.24, which is seen higher due to the highest average DPS of NABIL Bank Ltd.

## 4.1.2 Earning Per Share (EPS) Analysis

Normally, the success and failure of any business firm depends on the earning capacity. The earning of any business firm also helps to evaluate the performance. Level of earning shows the status or goodwill of the firm in the market. Higher earning shows higher strength while lower earning shows lower strength of business firms because the earning of any firm helps for it growth, expansion and diversification. So, all the business firms seek to have more and more earning so that they could sustain related efficiently in the competitive market. The following table shows all the details related to EPS of respective banks.

Table 4.2
EPS of Joint Venture Commercial Banks

Year \ Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	84.66	92.61	105.49	129.21	137.08	108.31	109.56	20.341646	18.5666721
NSBI	11.47	14.26	13.29	18.27	39.35	28.33	20.8283	10.8942194	52.3048063
HBL	49.45	49.05	47.91	59.24	60.66	62.74	54.8417	6.72671515	12.2657015
EBL	29.9	45.6	54.2	62.8	78.4	91.82	60.4533	22.3816413	37.0230061
Pooled Average = 61.42									

Source: Annual Reports of Commercial Banks

Fig 2
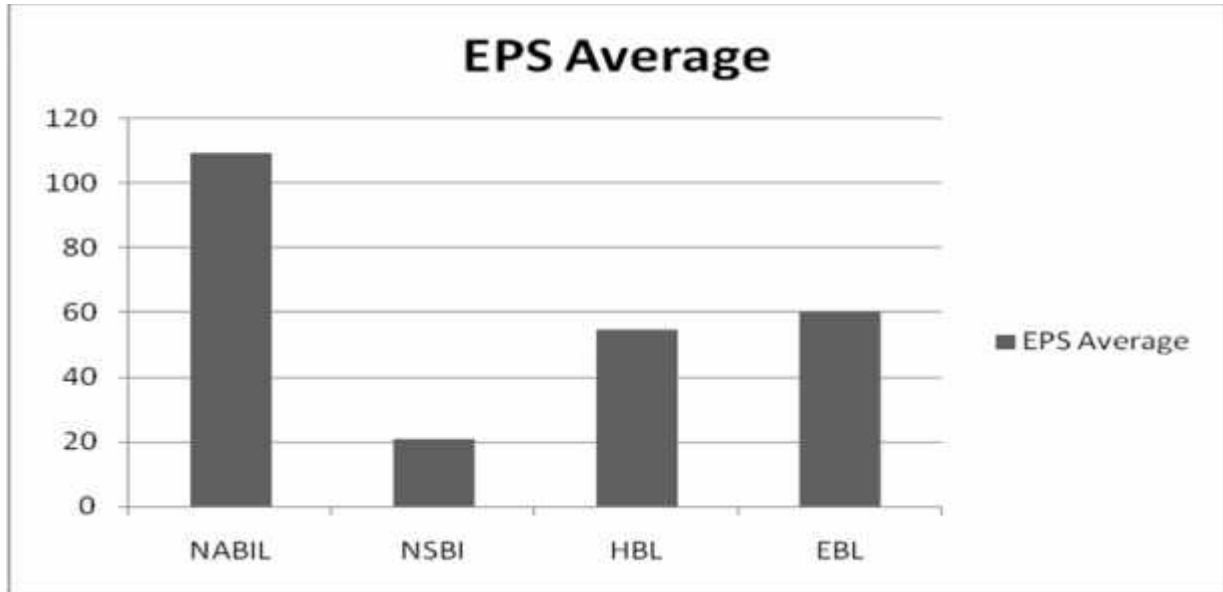
The above table shows the EPS of the concerned banks from 2003 to 2008. Normally, the performance and achievement of business organization are measured in terms of its capital to generate earning. EPS of NABIL is seen to be high in 2007 and it is seen in increasing trend from the beginning years but in the year 2008 it is decreased. NSBI has high EPS in 2007 and it became almost constant in 2003 and 2004 then goes on increasing every year. HBL has high EPS in 2008, which is almost constant to 2006; it become almost constant in 2003 and 2004, then go on increasing every year.

The Standard Deviation is highest of NABIL, which shows the highest fluctuation on EPS over the year. The C.V is highest in NSBI i.e. 52.305% the relatively lowest fluctuation on EPS is seen of HBL. The pooled average EPS of all the bank is seen 61.42. The pooled average EPS of bank is higher because of the higher average EPS of NABIL Bank.

By the observation of the above data, it is apparent that the general analysis of EPS cannot give true picture of a bank dividend policy. Therefore, it is necessary to measure the other necessary tools as well.

4.1.3 Market Price Per Share (MPS) Analysis

Table4.3

MPS for Joint Venture Commercial Bank (JVCB)

Year Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	740	1000	1505	2240	5050	5275	2635	2024.79629	76.8423638
NSBI	255	307	335	612	1176	1511	699.333	524.926154	75.0609371
HBL	836	840	920	1100	1740	1980	1236	498.541874	40.3351031
EBL	445	680	870	1379	2430	3132	1489.33	1070.01003	71.8448991
Pooled Average = 1514.92									

Source: Annual Reports of Commercial Banks

Fig 3
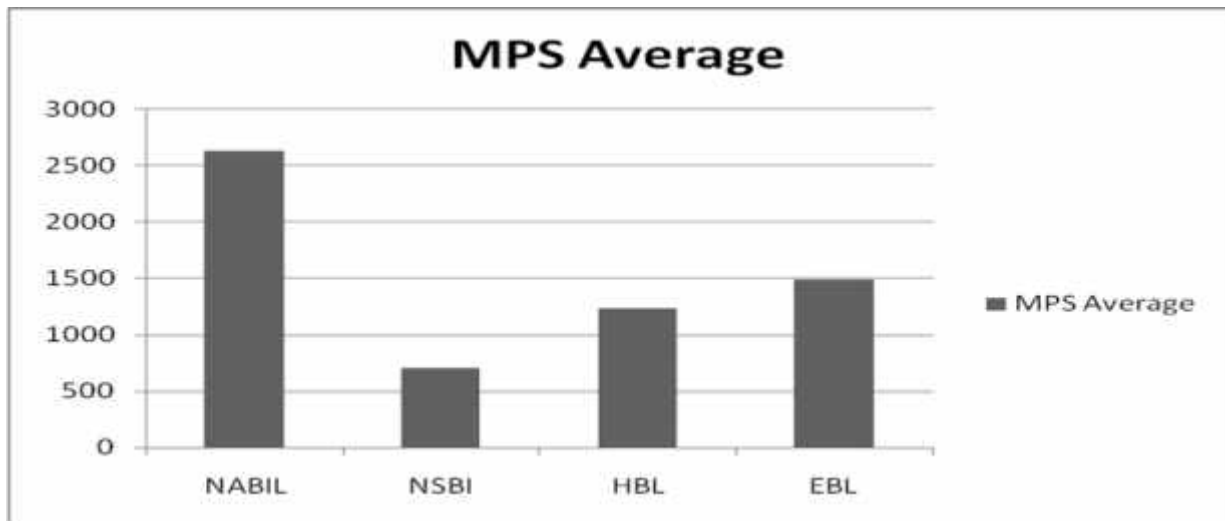
The above table shows that the market price per share of the concerned banks from the year 2003 to 2008. Market value per share means to evaluate value of share in the market.

Market Price Per Share of all the above banks is increasing continuously. NABIL Bank has the highest MPS, Which is Rs 2635. It means its share price remains relatively high in share market. NSBI has the least average MPS than other companies whose MPS is Rs 699.33. The standard deviation of NABIL and EBL are higher i.e. 2024.796, 1070.01 which means their MPS fluctuates highly. The standard deviation of NSBI and HBL is low i.e. 524.926 &

498.542, which means their MPS is relatively stable over the years. The C.V is higher likely to the standard deviation. It means relatively MPS of NABIL & NSBI fluctuate highly i.e. 76.84% & 75.061%. HBL has less fluctuation on MPS, as its C.V is 40.335%. The pooled average MPS of the bank is 1514.92. Among the pooled average MPS of banks, NABIL and EBL have greater contribution.

4.1.4 Price Earning Ratio Analysis

Table 4.4
P/E Ratio for Joint Venture Commercial Banks

Year \\ Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	8.74	10.8	14.27	17.34	36.84	48.7	22.7816667	16.1999116	71.1094226
NSBI	22.24	21.54	25.21	33.49	29.89	53.34	30.9516667	11.8848398	38.3980608
HBL	16.19	17.12	19.2	18.57	28.69	31.56	21.8883333	6.53070109	29.8364475
EBL	14.9	14.9	16	22	31	34.1	22.15	8.53340495	38.5255302
Pooled Average = 24.443									

Source: Annual Reports of Commercial Banks

Fig 4

P/E Ratio Average
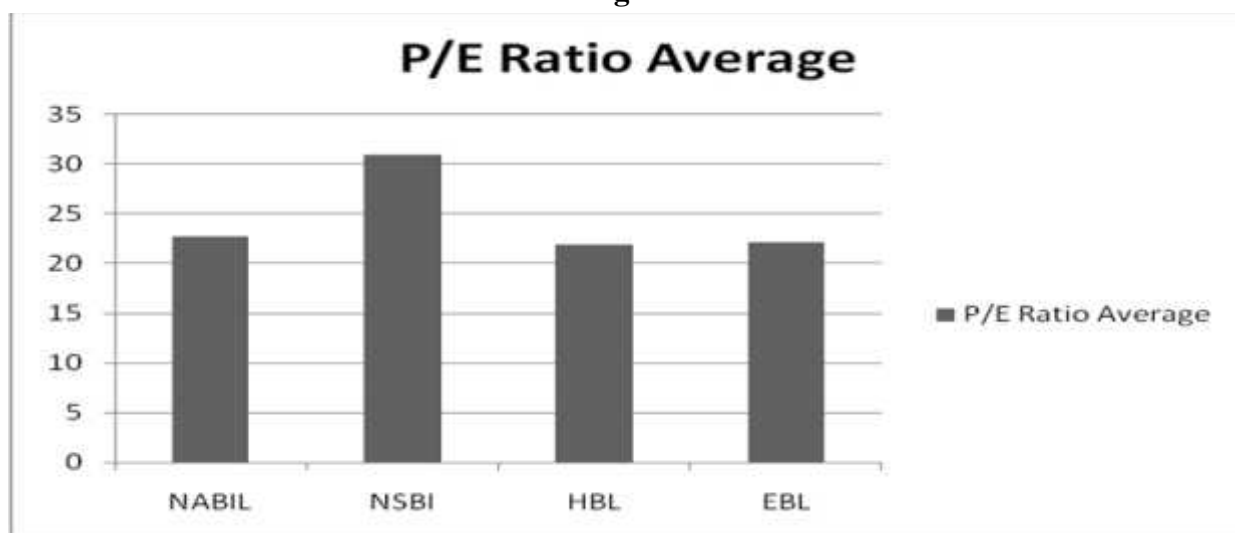
The above table depicts the price-earning ratio of five banks. This study helps us by classing the relationship between earning per share (EPS) and market price per share.

From the above table, P/E ratio does not seem stable of every company except NABIL whose P/E ratio is in increasing trend. P/E ratio of NABIL & NSBI is seen very high in the year

2007and 2008 respectively which are due to different reason i.e. less EPS and high MPS respectively. Because of these circumstances their average P/E ratio, standard deviation and C.V are also high which shows the greater chance to rise in MPS, if the EPS rise. The average P/E ratio of NSBI is 30.95 which shows that if the EPS increase by one time, MPS will increase average in average by 30.95 times and so for the other companies. The variation on P/E ratio is seen to be lowest of EBL.

The highest average P/E ratio of NSBI the gives the unrealistic interpretation that enhance of increase in MPS is more than 30 times if the EPS increase one time is rarely true. The pooled average P/E ratio of bank is 20.116. There is higher contribution of NSBI on P/E ratio of the average P/E ratio of banks.

4.1.5 Dividend Payout Ratio (DPR) Analysis

Table 4.5
Dividend Payout Ratio of Joint Venture Commercial Banks

Year / Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	59.05	70.19	66.36	65.78	102.13	92.33	75.9733333	17.1340488	22.5527142
NSBI	69.76	0	0	54.73	152.94	0	46.2383333	60.7034979	131.283923
HBL	50.55	40.77	65.91	59.08	65.94	71.72	58.995	11.5017542	19.4961509
EBL	66.88	43.85	36.9	39.8	51.02	54.45	48.8166667	11.053037	22.6419331
Pooled Average = 57.51									

Source: Annual Reports of Commercial Banks

Fig 5
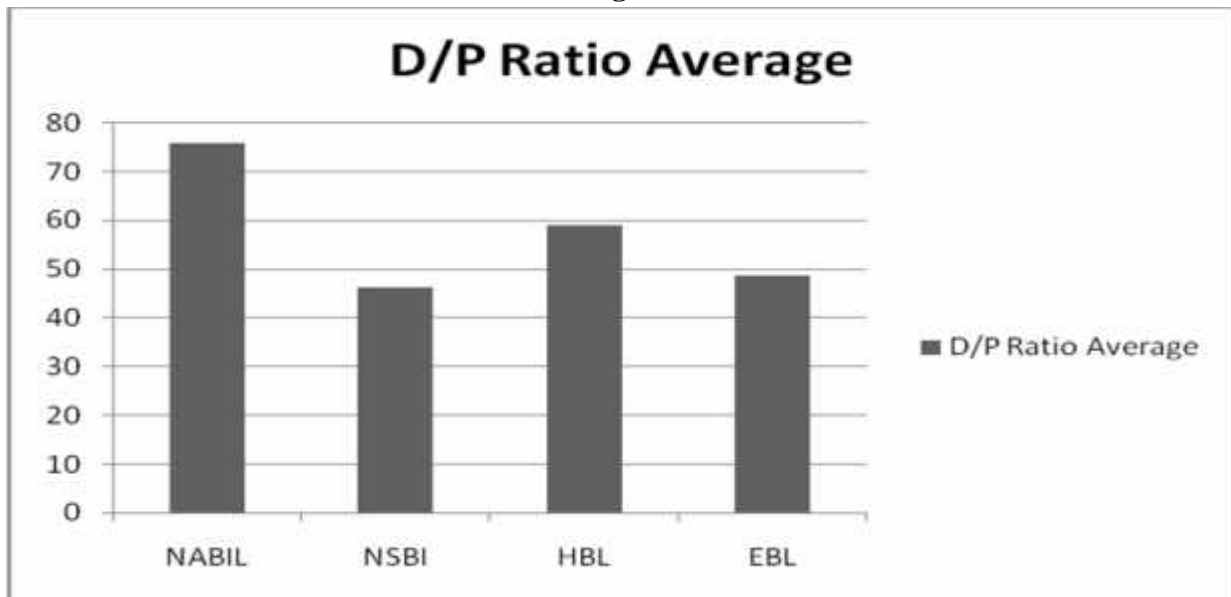
The above table (Table 4.5) shows the dividend payout ratio of the concerned banks from the year 2003 to 2008.

Assumption:
Conservative Dividend Policy: Less than 20%
Moderate Dividend Policy: 20% to 60%
Aggressive Dividend Policy: More than 60%

From the above table, it is seen that except NSBI, all the other banks i.e. NABIL, HBL and EBL provide dividend payout continuously over the years. In average NABIL has highest dividend payout of 75.97%. It means that it followed aggressive dividend policy by paying Rs 75.97 as dividend from total earnings of Rs 100 in average.

The NSBI has lowest average Dividend Payout Ratio 46.24%, which means only Rs 46.24, is paid out of total earning Rs 100. NSBI bank doesn't pay any dividend in some years. NSBI, EBL & HBL follow the moderate variation on Dividend Payout is seen high of NSBI which is 60.70%. It shows the greater relative fluctuation on Dividend Payout Ratio. The variation of HBL, NABIL and EBL are seen comparatively less which are 11.50%, 17.13% & 11.05%. It shows the smaller relative fluctuation on Dividend Payout Ratio. The pooled average Dividend Payout Ratio is 57.51. On the pooled average Dividend payout Ratio of the banks, NABIL has the greater contribution and NSBI has less contribution.
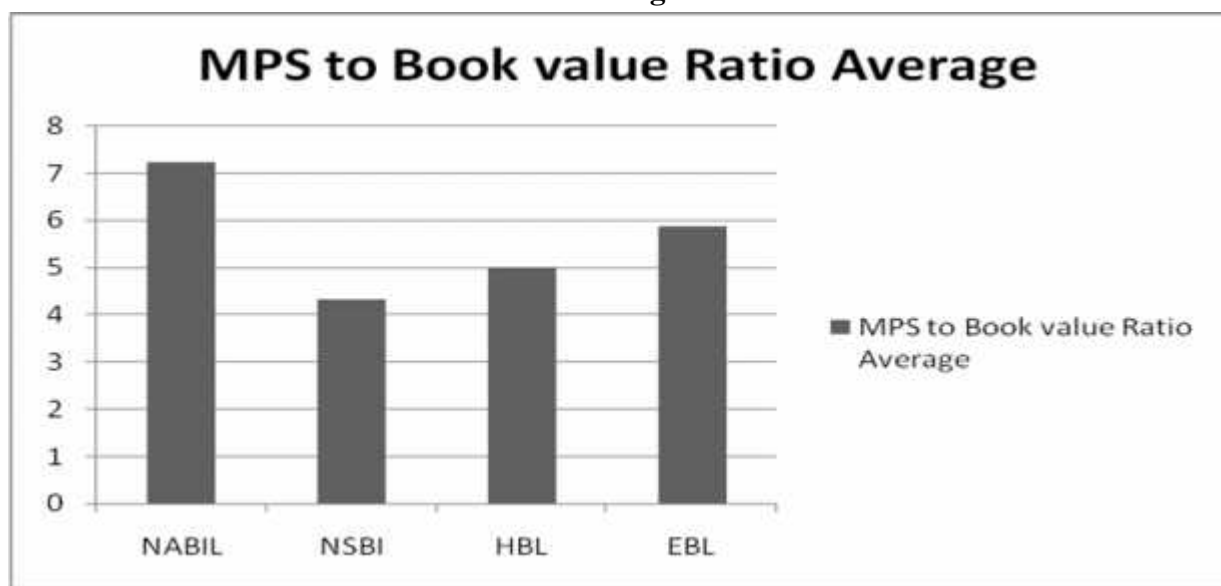
4.1.6 Market Price to Book Value Ratio Analysis
Table 4.6
Market Price to Book Value Ratio of Joint Venture Commercial Banks

Year \ Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	2.77	3.32	4.46	5.88	12.08	14.9	7.235	5.04036407	69.6664005
NSBI	1.9	2	2.09	4.032	6.6	9.41	4.33866667	3.07893012	70.9648921
HBL	3.37	3.4	3.84	4.81	6.572	7.98	4.99533333	1.89473235	37.9300483
EBL	2.96	3.96	3.95	6.33	8.3	9.73	5.87166667	2.71362058	46.2155081
Pooled Average = 5.61									

Source: Annual Reports of Commercial Banks

Fig 6

There is not any specific trend seen in the market to book value ratio. The highest average market to book value ratio is seen in NABIL bank which is 7.23. It means for the value of Rs 1 per share, book value have Rs 7.23 market price. The lowest market price to book value is of NSBI Ltd which is Rs 4.34. It means if book value per share is Rs. 1, market price per share is only Rs 4.34. The market price to book value ratio is highly fluctuate on NSBI Bank Ltd. i.e. C.V. =70.96. The market price to book value ratio is relatively stable of HBL which have C.V of 37.93%. The above data shows that the companies whose average market value to book value is high, their C.V are high and vice-versa. The pooled average market value to book value ratio is 5.61. NSBI has less contribution on the pooled average market to book value

ratio and NABIL has high contribution on the pooled average market to book value ratio among the average market to book value ratio of banks i.e. financial institutions.

4.1.7 Dividend Yield Analysis (DY)

Table 4.7

Dividend Yield Ratio of Joint Venture Commercial Banks

Year \ Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	6.75	6.5	4.65	3.79	2.77	1.89	4.39166667	1.96589335	44.764175
NSBI	3.13	0	0	1.63	5.12	0	1.64666667	2.1165601	128.536039
HBL	2.99	2.38	3.43	3.18	2.29	2.27	2.75666667	0.50666228	18.3795265
EBL	4.49	2.49	2.29	1.81	1.64	1.6	2.38666667	1.09114008	45.7181596
Pooled Average = 2.795									

Source: Annual Reports of Commercial Banks

Fig 7
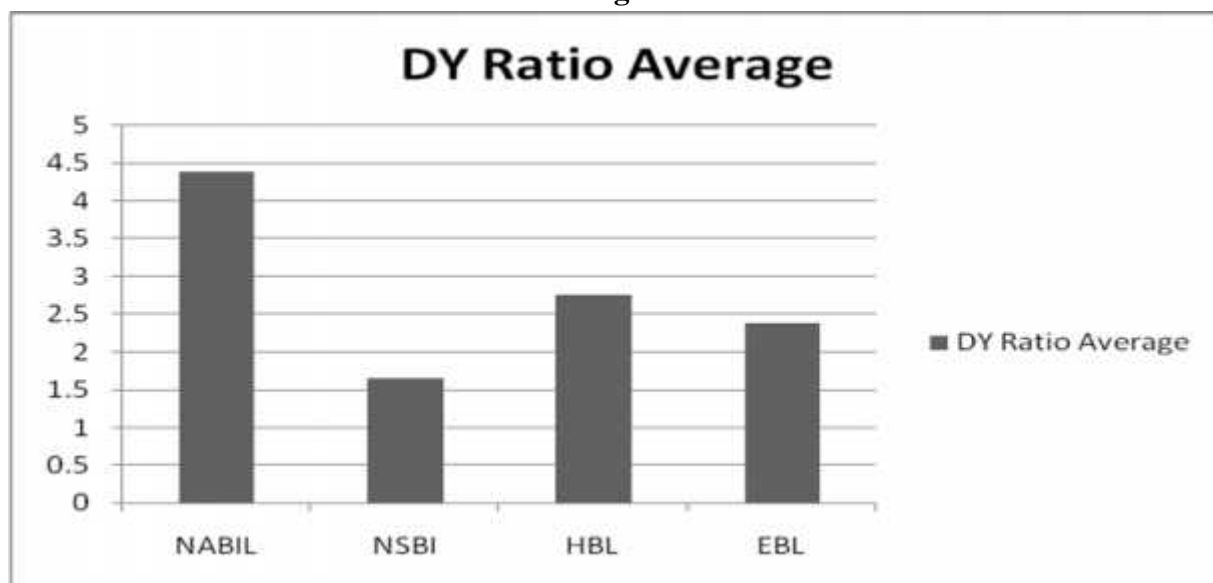
The above table 4.7 shows dividend yield analysis for the year 2003 to 2008. Dividend highly influences the market value per share because a change in dividend per share can bring effective change in market value of the share. Therefore before allocation of dividend to shareholders the impact on market scenario and price fluctuation is to be studied and evaluated for the long run survival of the bank.

Dividend Yield ratio for all the companies fluctuates from year to year. Average high dividend yield ratio is seen of NABIL bank, which is 4.39%, which means out of Rs 100 market price of a share, Rs 4.39 is paid as dividend by the NABIL bank. Dividend Yield ratio of NSBI is seen to be comparatively low in average that is 1.65%. It means out of Rs 100 market price of a share only Rs 1.65 are paid as dividend by the respective companies. The dividend Yields ratios are highly fluctuate on all the companies. The pooled average dividend yield ratio of the bank is 2.795. Among the banks, NABIL Has highest contribution & NSBI has lowest contribution on the pooled average dividend yield ratio. The dividend yield ratio of all the banks are in fluctuation i.e. NABIL has high dividend yield ratio in 2003; it decreased in the year 2004, 2005, 2006, 2007 and 2008 continuously. NSBI has 3.13% dividend in 2003, it reduced to "0" in the year 2004 & 2005 respectively & it increased again in 2006 then reached in the peak in 2007 and again reduced to "0" in 2008.

Likewise the dividend payout ratio of HBL and of EBL has higher fluctuation as compared to 2003, it reduced in 2004, 2005, 2006, 20007 continuously in the decreasing trend.

The DPS paid by four companies is influenced by various factors and it gets influenced to the other factors. The relation between DPS paid by a company to the other factors can be expressed by using correlation co-efficient.

4.2 Correlation Analysis

1. Simple Correlation

Correlation analysis is generally used to describe the degree of relationship between two or more variables. In statistics, it is used in order to depict the covariance between two or more variables. It helps to determine whether a high, moderate and low degree of positive or negative correlation. The under table depicts the relationship among EPS, DPS, PE, MPS, and DY.

2. Regression Analysis

The regression is a statistical method for investing relationship between the variables by the establishment of an approximate functional relationship between them. It is considered as a useful tool for determining the strength of relation between two (Simple Regression) or more (Multiple Regression) variables. It helps to predict or estimate the value of one variable when the value of other variables is known. The analysis, which is used to explain the average relationship between two variables, is known as simple linear regression analysis. In this study, the following Simple Regressions have been analyzed.

a) Simple Correlation and Regression between EPS and MPS

Following model has been used to analyze correlation between dependent variable DPS and the independent variable EPS.

$Y = a + bX$

Where,

Y = Market Per Share (Dependent Variable)

a = Regression Constant

b = Regression Coefficient

X = Earning Per Share (Independent Variable)

Table 4.8

Simple Correlation & Regression between EPS and MPS

Banks	NABIL	NSBI	HBL	EBL
a	-4508.31	-152.88	-2363.92	-1309.09
b	65.20	40.91	65.64	46.29
SEe	1710.63	310.26	259.19	299.01
r	0.6550	0.8491	0.8858	0.9683
r^2	0.429	0.7210	0.7846	0.7846
S.E.(r)	0.2330	0.1139	0.0879	0.0255
P.E.(r)	0.1572	0.0768	0.0593	0.0172
6 P.E.	0.9432	0.4608	0.3558	0.1032
Significant/ Insignificant	Insignificant	Significant	Significant	Significant

Source: Appendix 6

The above data represents the different indicators helpful to analyze the simple correlation and regression between EPS and MPS of the sample four joint venture Commercial banks, which EPS is independent variable and MPS is the dependent variable. With the help of these indicators, it can be concluded as follows:

NABIL:

The regression constant or intercept coefficient (a) is -4508.31, which shows that the average MPS would be –Rs -4508.31 if the EPS were zero. The result shows that the

slope of the regression line (b) is 65.20, which indicates that positive correlation exists between EPS and MPS of NABIL Bank. One rupee increase in EPS cause Rs. 65.20 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.429, which indicates that 42.9% of the variation in MPS is affected or determined by the explanatory variable EPS. The simple correlation (r) between EPS and MPS is 0.6550, which indicates positive relationship between EPS and MPS of NABIL Bank. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

NSBI:

The regression constant or intercept coefficient (a) is -152.88, which shows that the average MPS would be –Rs 152.88 if the EPS were zero. The result shows that the slope of the regression line (b) is 40.91, which indicates that positive correlation exists between EPS and MPS of NSBI Bank. One rupee increase in EPS cause Rs. 40.91 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.7210, which indicates that 72.10% of the variation in MPS is affected or determined by the explanatory variable EPS. The simple correlation (r) between EPS and MPS is 0.8491, which indicates strong positive relationship between EPS and MPS of NABIL Bank. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

HBL:

The regression constant or intercept coefficient (a) is -2363.92, which shows that the average MPS would be –Rs 2363.92 if the EPS were zero. The result shows that the slope of the regression line (b) is 65.64, which indicates that positive correlation exists between EPS and MPS of HBL Bank. One rupee increase in EPS cause Rs. 65.64 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.7846, which indicates that 78.46% of the variation in MPS is affected or determined by the explanatory variable EPS. The simple correlation (r) between EPS and MPS is 0.8858, which indicates strong positive relationship between EPS and MPS of HBL Bank. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

EBL:

The regression constant or intercept coefficient (a) is -1309.09, which shows that the average MPS would be –Rs 1309.09 if the EPS were zero. The result shows that the slope of the regression line (b) is 46.29, which indicates that positive correlation exists between EPS and MPS of EBL Bank. One rupee increase in EPS cause Rs. 46.29 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.7846, which indicates that 78.46% of the variation in MPS is affected or determined by the explanatory variable EPS. The simple correlation (r) between EPS and MPS is 0.9683,

which indicates strong positive relationship between EPS and MPS of EBL Bank. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

b) Simple Correlation and Regression Analysis between DPS and MPS

Following model has been used to analyze correlation between dependent variable DPS and the independent variable EPS.

$Y = a + bX$

Where,
Y = Market Per Share (Dependent Variable)
a = Regression Constant
b = Regression Coefficient
X = Dividend Per Share (Independent Variable)

Table 4.9
Simple Correlation and Regression between DPS and MPS

Banks	NABIL	NSBI	HBL	EBL
a	-2171.75	585.10	-356.29	-910.50
b	56.55	8.767	48.60	82.28
SEe	1023.47	539.69	236.144	204.50
r	0.8920	0.3929	0.9058	0.9853
r^2	0.7956	0.1543	0.8205	0.9708
S.E.(r)	0.083	0.3452	0.0732	0.0119
P.E.(r)	0.0563	0.2328	0.049	0.0080
6 P.E.	0.3378	1.3968	0.294	0.0482
Significant/ Insignificant	Significant	Insignificant	Significant	Significant

Source: Appendix 2

The above table representation indicators helpful to analyze the simple correlation and regression between DPS and MPS of the sample four joint venture commercial banks, where DPS is independent variable and MPS is the dependent variable. With the help of these indicators, it can be concluded as below:

NABIL:

The regression constant or intercept coefficient (a) is -2171.75, which shows that the average MPS would be –Rs 2171.75 if the DPS were zero. The result shows that the slope of the regression line (b) is 56.55, which indicates that positive correlation exists

between DPS and MPS of NABIL Bank. One rupee increase in DPS cause Rs. 56.55 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.7956, which indicates that 79.56% of the variation in MPS is affected or determined by the explanatory variable DPS. The simple correlation (r) between DPS and MPS is 0.8920, which indicates strong positive relationship between DPS and MPS of NABIL Bank. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

NSBI:

The regression constant or intercept coefficient (a) is 585.10, which shows that the average MPS would be Rs 585.10 if the DPS were zero. The result shows that the slope of the regression line (b) is 8.767, which indicates that positive correlation exists between DPS and MPS of NSBI Bank. One rupee increase in DPS cause Rs. 8.767 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.1543, which indicates that 15.43% of the variation in MPS is affected or determined by the explanatory variable DPS. The simple correlation (r) between DPS and MPS is 0.3929, which indicates strong positive relationship between DPS and MPS of NSBI Bank. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

HBL:

The regression constant or intercept coefficient (a) is -5269.68, which shows that the average MPS would be –Rs 5269.68 if the EPS were zero. The result shows that the slope of the regression line (b) is 67.18, which indicates that positive correlation exists between EPS and MPS of NABIL Bank. One rupee increase in EPS cause Rs. 67.18 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.7687, which indicates that 76.87% of the variation in MPS is affected or determined by the explanatory variable EPS. The simple correlation (r) between EPS and MPS is 0.8767, which indicates strong positive relationship between EPS and MPS of NABIL Bank. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

EBL:

The regression constant or intercept coefficient (a) is -910.50, which shows that the average MPS would be –Rs 910.50 if the DPS were zero. The result shows that the slope of the regression line (b) is 82.28, which indicates that positive correlation exists between DPS and MPS of EBL. One rupee increase in DPS cause Rs. 82.28 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.9708, which indicates that 97.08% of the variation in MPS is affected or determined by the explanatory variable DPS. The simple correlation (r) between DPS and MPS is 0.9853,

which indicates strong positive relationship between DPS and MPS of EBL. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

c) Simple Correlation and Regression analysis between MPS and DPR:

Following model has been used to analyze correlation between dependent variable MPS and the independent variable DPR.

$Y = a + bX$

Where,

Y = Market Per Share (Dependent Variable)

a = Regression Constant

b = Regression Coefficient

X = Dividend Payout Ratio (Independent Variable)

Table 4.10
Simple Correlation and Regression Analysis between MPS and D/PR

Banks	NABIL	NSBI	HBL	EBL
a	-5789.68	606.38	-669.53	1101.24
b	110.89	2.01	32.30	7.95
SEe	782.62	570.78	371.66	1192.27
r	0.9383	0.233	0.7452	0.0821
r^2	0.880	0.0543	0.5554	0.0067
S.E.(r)	0.0488	0.3861	0.1815	0.405
P.E.(r)	0.0329	0.2604	0.1224	0.2735
6 P.E.	0.1974	1.5624	0.7344	1.641
Significant/ Insignificant	Significant	Insignificant	Significant	Insignificant

Source: Appendix 3

The above table represents the different indicators helpful to analyze the simple correlation and regression between DPR and MPS of the sample four joint venture commercial banks, where DPR is independent variable and MPS is the dependent variable. With the help of these indicators, it can be concluded as follows:

NABIL:

The regression constant or intercept coefficient (a) is -5789.68, which shows that the average MPS would be –Rs 5789.68 if the DPR were zero. The result shows that the slope of the regression line (b) is 110.89, which indicates that positive correlation exists between DPR and MPS of NABIL. One rupee increase in DPR cause Rs. 110.89 increases in the market price per share of the bank. The coefficient of determination (r^2) is 0.880, which indicates that 88% of the variation in MPS is affected or determined by the explanatory variable DPR. The simple correlation (r) between DPR and MPS is 0.9383, which indicates strong positive relationship between DPR and MPS of NABIL. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

NSBI:

The regression constant or intercept coefficient (a) is 606.38, which shows that the average MPS would be Rs 606.38 if the DPR were zero. The result shows that the slope of the regression line (b) is 2.01, which indicates that positive correlation exists between DPR and MPS of NSBI. One rupee increase in DPR cause Rs. 2.01 increases in the market price per share of the bank. The coefficient of determination (r^2) is 0.0543, which indicates that 5.43% of the variation in MPS is affected or determined by the explanatory variable DPR. The simple correlation (r) between DPR and MPS is 0.233, which indicates positive relationship between DPR and MPS of NSBI. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

HBL:

The regression constant or intercept coefficient (a) is -669.53, which shows that the average MPS would be –Rs 669.53 if the DPR were zero. The result shows that the slope of the regression line (b) is 32.30, which indicates that positive correlation exists between DPR and MPS of HBL. One rupee increase in DPR cause Rs 32.30 increases in the market price per share of the bank. The coefficient of determination (r^2) is 0.5554, which indicates that 55.54% of the variation in MPS is affected or determined by the explanatory variable DPR. The simple correlation (r) between DPR and MPS is 0.7452, which indicates strong positive relationship between DPR and MPS of HBL. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

EBL:

The regression constant or intercept coefficient (a) is 1101.24, which shows that the average MPS would be Rs 1101.24 if the DPR were zero. The result shows that the slope of the regression line (b) is 7.95, which indicates that positive correlation exists between DPR and MPS of NABIL Bank. One rupee increase in DPR cause Rs. 7.95 increase in

the market price per share of the bank. The coefficient of determination (r^2) is 0.0067, which indicates that 0.67% of the variation in MPS is affected or determined by the explanatory variable DPR. The simple correlation (r) between DPR and MPS is 0.0821, which indicates positive relationship between DPR and MPS of EBL. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

d) Simple correlation and Regression analysis between MPS and DY Ratio:

Following model has been used to analyze correlation between dependent variable MPS and the independent variable Dividend Yield.

$Y = a + bX$
Where,
Y = Market Per Share (Dependent Variable)
a = Regression Constant
b = Regression Coefficient
X = Dividend Yield Ratio (Independent Variable)

Table 4.11

Simple Correlation and Regression Analysis between MPS and DY Ratio

Banks	NABIL	NSBI	HBL	EBL
a	6836.76	632.87	2993.68	3277.75
b	-957.12	40.53	-636.84	-727
SEe	840.52	578.75	421.32	783.05
r	-0.9292	0.163	-0.6450	-0.7573
r^2	0.8635	0.0267	0.416	0.5734
S.E.(r)	0.0557	0.397	0.2384	0.1741
P.E.(r)	0.0376	0.2680	0.1608	0.1175
6 P.E.	0.2256	1.608	0.9648	0.705
Significant/ Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

Source: Appendix 4

The above table represents the different indicators helpful to analyze the simple correlation and regression between DY and MPS of the sample four joint venture commercial banks, where DY is independent variable and MPS is the dependent variable. With the help of these indicators, it can be concluded as follows:

NABIL:

The regression constant or intercept coefficient (a) is 6836.76, which shows that the average MPS would be Rs 6836.76 if the DYR were zero. The result shows that the slope

of the regression line (b) is -957.12, which indicates that negative correlation exists between DYR and MPS of NABIL. One rupee increase in DYR cause –Rs 957.12 increase in the market price per share of the bank. The coefficient of determination (r^2) is 0.8635, which indicates that 86.35% of the variation in MPS is affected or determined by the explanatory variable DYR. The simple correlation (r) between DYR and MPS is -0.9292, which indicates strong negative relationship between DYR and MPS of NABIL Bank. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

NSBI:

The regression constant or intercept coefficient (a) is 632.87, which shows that the average MPS would be Rs 632.87 if the DYR were zero. The result shows that the slope of the regression line (b) is 40.53, which indicates that positive correlation exists between DYR and MPS of NSBI. One rupee increase in DYR cause Rs. 40.53 increases in the market price per share of the bank. The coefficient of determination (r^2) is 0.0267, which indicates that 2.67% of the variation in MPS is affected or determined by the explanatory variable DYR. The simple correlation (r) between DYR and MPS is 0.163, which indicates positive relationship between DYR and MPS of NSBI. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

HBL:

The regression constant or intercept coefficient (a) is 2993.68, which shows that the average MPS would be Rs 2993.68if the DYR were zero. The result shows that the slope of the regression line (b) is -636.84, which indicates that negative correlation exists between DYR and MPS of HBL. One rupee increase in DYR cause –Rs 636.84 increases in the market price per share of the bank. The coefficient of determination (r^2) is 0.416, which indicates that 41.6% of the variation in MPS is affected or determined by the explanatory variable DYR. The simple correlation (r) between DYR and MPS is -0.6450, which indicates negative relationship between DYR and MPS of HBL. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

EBL:

The regression constant or intercept coefficient (a) is 3277.75, which shows that the average MPS would be Rs 3277.75 if the DYR were zero. The result shows that the slope of the regression line (b) is -727, which indicates that negative correlation exists between DYR and MPS of EBL. One rupee increase in DYR cause -Rs. 727 increases in the market price per share of the bank. The coefficient of determination (r^2) is 0.5734, which indicates that 57.34% of the variation in MPS is affected or determined by the explanatory variable DYR. The simple correlation (r) between DYR and MPS is -0.7573,

which indicates strong negative relationship between DYR and MPS of EBL. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

e) Simple Correlation and Regression analysis between PE Ratio and DPS:

Following model has been used to analyze correlation between dependent variable DPS and the independent variable P/E Ratio

$Y = a + bX$

Where,

Y = DPS (Dependent Variable)

a = Regression Constant

b = Regression Coefficient

X = D/P Ratio (Independent Variable)

Table 4.12

Simple Correlation and Regression Analysis between PE Ratio & DPS

Banks	NABIL	NSBI	HBL	EBL
a	49.92	17.77	4.61	-3.36
b	1.54	-0.1532	1.279	1.4687
SEe	24.98	26.22	4.91	2.9396
r	0.7811	-0.0774	0.8826	0.97825
r^2	0.6102	0.0060	0.7790	0.9568
S.E.(r)	0.1591	0.4058	0.0902	0.0176
P.E.(r)	0.1073	0.2737	0.06087	0.0119
6 P.E.	0.6438	1.6422	0.3652	0.0714
Significant/ Insignificant	Significant	Insignificant	Significant	Significant

Source: Appendix 5

The above table represents the different indicators helpful to analyze the simple correlation and regression between P/E Ratio and DPS of the sample four joint venture commercial banks, where P/E is independent variable and DPS is the dependent variable. With the help of these indicators, it can be concluded as follows:

NABIL:

The regression constant or intercept coefficient (a) is 49.92, which shows that the average DPS would be Rs 49.92 if the PER were zero. The result shows that the slope of the regression line (b) is 1.54, which indicates that positive correlation exists between PER and DPS of NABIL. One rupee increase in PER cause Rs. 1.54 increase in the dividend

per share of the bank. The coefficient of determination (r^2) is 0.6102, which indicates that 61.02% of the variation in DPS is affected or determined by the explanatory variable PER. The simple correlation (r) between PER and DPS is 0.7811, which indicates strong positive relationship between PER and DPS of NABIL. Here, since r is greater than 6.P.E. (r), the correlation is considered to be significant.

NSBI:

The regression constant or intercept coefficient (a) is 17.77, which shows that the average DPS would be Rs 17.77if the PER were zero. The result shows that the slope of the regression line (b) is -0.1532, which indicates that negative correlation exists between PER and DPS of NSBI. One rupee increase in PER cause -Rs. 0.1532 increases in the dividend per share of the bank. The coefficient of determination (r^2) is 0.006, which indicates that 0.6% of the variation in DPS is affected or determined by the explanatory variable PER. The simple correlation (r) between PER and DPS is -0.0774, which indicates negative relationship between PER and DPS of NSBI. Here, since r is less than 6.P.E. (r), the correlation is considered to be insignificant.

HBL:

The regression constant or intercept coefficient (a) is 4.61, which shows that the average DPS would be Rs 4.61 if the PER were zero. The result shows that the slope of the regression line (b) is 1.279, which indicates that positive correlation exists between PER and DPS of NSBI. One rupee increase in PER cause Rs. 1.279 increases in the dividend per share of the bank. The coefficient of determination (r^2) is 0.7790, which indicates that 77.90% of the variation in DPS is affected or determined by the explanatory variable PER. The simple correlation (r) between PER and DPS is 0.8826, which indicates strong positive relationship between PER and DPS of NSBI. Here, since r is higher than 6.P.E. (r), the correlation is considered to be significant.

EBL:

The regression constant or intercept coefficient (a) is -3.36, which shows that the average DPS would be -Rs 3.36 if the PER were zero. The result shows that the slope of the regression line (b) is 1.4687, which indicates that positive correlation exists between PER and DPS of NSBI. One rupee increase in PER cause Rs. 1.4687 increases in the dividend per share of the bank. The coefficient of determination (r^2) is 0.9568, which indicates that 95.68% of the variation in DPS is affected or determined by the explanatory variable PER. The simple correlation (r) between PER and DPS is 0.9783, which indicates strongly positive relationship between PER and DPS of NSBI. Here, since r is higher than 6.P.E. (r), the correlation is considered to be significant.

4.3 Test of Hypothesis

This part of the study is concerned with the test of the relationship between dependent and independent variables, whether the relationship is statistically significant or not. Here, it has been tried to find whether the independent variables have statistically significant relationship with dependent variables or not. The test is based on the pooled average data for the five year periods of the five commercial banks.

Hypothesis Test- 1

In this test, it has been tried to find whether the independent variables EPS (X_2) and DPS (X_2) have statistically significant relationship with dependent variable MPS (X_1) or not.

Null Hypothesis H_o: $b_1 = b_2 = 0$. That is the regression equation of X_1 on X_2 and X_3 is not significant. In other words, there is no relationship between dependent variable X_1 and two independent variables X_2 and X_3.

Alternative Hypothesis H1: b_1 b_2 0. (i.e. at least one b1   0). The regression equation of X_1 on X_2 and X_3 is significant. In other word, there is relationship between dependent variable X_1 and two independent variables X_2 and X_3.

Test statistic: Under H0 the test statistics is;

$$F = \frac{MSR}{MSE}$$

Where,

MSR = Regression Mean Sum of Square = Explained Variance

$$= \frac{\text{Expained Variation}}{\text{Its degree of Freedom}} = \frac{SSR}{K-1}$$

MSE = Error Mean Sum of Square = Unexplained Variance

$$= \frac{\text{Expained Variation}}{\text{Its degree of Freedom}} = \frac{SSE}{n-k}$$

Where,
SSR = Regression Sum of Square
    = Explained Variation

$$= \sum (\tilde{X}_1 - \bar{X}_1)^2$$

    = 270450.26

SST = Total Sum of Square
    = Total Variation in the Dependent Variable

$$= \sum (X_1 - \bar{X_1})^2$$

     = 476738.00

SSE = Error Sum of Square

     = Unexplained Variation

     = SST – SSR

     = 476738.00-270450.26 = 208287.74

Here, calculated F (2, 2) = 0535

Since calculated value of F is more than the tabulated value of F, it is significant and hence, H_1 is accepted which means that the regression equation of dependent variable X_1 (MPS) on two independent variables X_2 and X_3 (EPS and DPS) is significant. In other words, there is significant relationship between the dependent variable X_1 and two independent variables X_2 and X_3.

Hypothesis Test - 2

In this test, it has been tried to find whether the independent variables DPR (X_2) and DPS (X_3) have statistically significant relationship with dependent variable MPS (X_1) or not.

Null Hypothesis H_0 : $b_1 = b_2 = 0$. That is the regression equation of X_1 and X_2 and X_3 is not significant. In other words, there is no relationship between dependent variable X_1 and two independent variables X_2 and X_3.

Alternative Hypothesis H1: b_1 b_2 0. (i.e. at least one b1 0). The regression equation of X_1 on X_2 and X_3 is significant. In other word, there is relationship between dependent variable X_1 and two independent variables X_2 and X_3.

Test statistic: Under H0 the test statistics is;

$$F = \frac{MSR}{MSE}$$

Where,

     MSR = Regression Mean Sum of Square = Explained Variance

$$= \frac{\text{Expained Variation}}{\text{Its degree of Freedom}} = \frac{SSR}{K-1}$$

     MSE = Error Mean Sum of Square = Unexplained Variance

$$= \frac{\text{Expained Variation}}{\text{Its degree of Freedom}} = \frac{\text{SSE}}{n-k}$$

Where,

SSR = Regression Sum of Square

= Explained Variation

$$= \sum{}' (\bar{X}_1 - \overline{X}_1)^2$$

= 1638

SST = Total Sum of Square

= Total Variation in the Dependent Variable

$$= \sum{}' (X_1 - \overline{X}_1)^2$$

= 448738

SSE = Error Sum of Square

= Unexplained Variation

= SST – SSR

= 448738-1638= 447100

Here, calculated F (2, 2) =20.23

The tabulated value of F at 5% level of significance for two tailed test with d.f. (2,2) is , $F_{0.05}(2,2) = 19$

Since the calculated value of F is more than the tabulated value of F, it is significant and hence, H_1 is accepted which means that the regression equation of dependent variable X_1(MPS) on two independent variables X_2 and X_3 (DPR and DPS) is significant. In other words, there is significant relationship between the dependent variable X_1 and two independent variables X_2 and X_3.

4.4 Major Findings of the Study

1. MPS of the commercial banks is average is fluctuating every year. NABIL bank has got success to keep the EPS more than average through out the study period. Where as HBL, EBL, and SBI bank have less than average through out the study period.

2. DPS of the commercial banks in average is also fluctuating every year. NABIL has kept the DPS more than average through out the study period. SBI has more than average DPS only in the year 2007. SBI has not distributed dividend in the year 2004, and 2005. All banks have distributed dividend in the fiscal years 2007.

3. DPR of the commercial banks are also fluctuating every year. DPR of the NABIL is more than average throughout the study period.

4. MPS of the sample banks is also in fluctuating trend. The coefficient of variation indicates that there is no consistency of MPS. The C.V of NABIL is 76.84%, NSBI is 75.05%, HBL is 40.34% and the C.V o EBL is 71.84%.

5. The average price earning ratio (P/E) of NABIL is 22.78%, HBL is 21.89%, EBL is 22.15%, and NSBI has the highest P/E ratio of 30.95%. Higher P/E ratio indicates the favorable performance during the research period.

6. The average dividend yield of the banks under the study indicates that the dividend yield is quite low. NSBI has the lowest dividend yield i.e. 1.65%.

7. The Average Market value to book value ratio of NABIL is highest among the sampled banks and NSBI has lowest i.e. 7.235 and 4.33. The pooled average market value to book value ratio is 5.61 in which NABIL contributes more and NSBI contributes less.

8. The DPS of NABIL is positive correlated with MPS, P/E ratio is positively correlated. But the correlation between DPR, DY of this bank is negative.

9. There is highly positive correlation between EPS and MPS of the sample firms in average.

10. There is positive correlation between EPS and DPS of the sample firms in average. Similarly correlation between MPS and DPR, PE ratio and DPS of the firms are also positively correlated.

11. There is a negative correlation between MPS and DY in average.

12. The correlation co-efficient between MPS and DPR is positive of all sampled banks. It indicates that if the sample firms want to increase their stock price, then

they should increase DPR. But it con not be said with confidence whether the obtained value of correlation coefficient is statistically significant or not as it is less than 6P.E.(r) in average.

13. From the test of hypothesis–1, I found that there is significant relationship between the dependent variable MPS and two independent variables EPS and DPS.

14. From the test of hypothesis-2, I found that there is significant relationship between the dependent variable MPS and two independent variables DPR and DPS.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The first chapter presented earlier about a brief introduction of the study and the review of literature with possible review of journals, ideas, theories and research findings have also been presented in the second chapter. Total of the available data are presented and analyzed in fourth chapter and methodology for the study has also been described earlier in the third chapter.

Now in this chapter focuses on some selected action oriented findings, conclusion and recommendation on the basis of analysis, which have been derived from Nepalese listed financial institution specially the five joint venture banks. This chapter is very important in the sense that:

- ➢ It shows the result what was observed during research.

- ➢ It concludes the findings in an understandable from and

- ➢ It provides clues of suggestions to the concerned authorities as well as practioners and academicians. The recommendation is presented in the last part of this considering major findings and gaps found there to.

5.1 Summary

Dividend distribution is the very important factor to any organization for effective goal achievement to satisfy the shareholders. Actually, paying dividend to shareholders is an effective way to attract new investors to invest in shares. Due to decision of earnings of a company between dividend payout and retention of earnings, it effect on market price of share is a crucial question. So, a wise policy should be maintained between shareholders interest and corporate growth from internally generated funds. The funds sometimes could not be used in case of lack of investment opportunities. In such a situation, distribution of dividend to shareholders is taken as best because shareholder has greater investment opportunities to employ elsewhere.

Dividend serves as a simple, comprehensive signal of management's interpretation of the firm's recent performance and its future prospects. Dividend refers to that portion of a firm's net earning which are paid out to the shareholder in return of their investment. Paying dividend to shareholder is an effective way to attract new investors to invest s(r) share.

Most of the things about dividend policy and brief introduction of this study have been already presented in the chapter; the available literature related to dividend policy is re-invested. Moreover, research methodology is described in third chapter. All the available data are presented and analyzed in the fourth chapter. Taking in the mind for more extensive analysis, company wise analysis has also been made. This study is based on secondary data for a period of last 5 years. In order to assess the impact of dividend policy on MPS, available information from different sectors were reviewed analyzed. Co-relation and regression analysis have been done to make the research more reliable. At lat, testing of hypothesis has been done.

In the final chapter, and attempt has been made to present summary, findings and recommendation. Among many commercial banks, four banks namely NABIL, NSBI, EBL, and HBL are selected for study.

The main objective of the study is to see the relationship of dividend per share, earning per share, dividend payout ratio, dividend yield, liquidity ratio, and profitability ratio on market price per share. The study has revealed the following facts:

Nepal has not sufficient rules and regulation to control the financial institutions. By the same way, commercial banks of Nepal have not satisfactory results about dividend decision. In practices, every firm has followed own types of dividend policy or policy is made in their favor. The financial institutions adopt different dividend policies. It might cause uncertainty among shareholders. The relationship between dividend and market price per share should be like that of nail and meat. But the relation is not good in situation underdeveloped capital market like Nepal. Dividend distribution is not matching with the earning of commercial bank. Similarly, no proper relationship between dividend and market price of share exists. Company with lower returns records rigid price whereas company do not become rigid in price of share. Thus, return of the company is not reflecting the market price of share.

The market price of share is affected by the financial position and the dividend paid by the firms. In this regards, the MPS of the sample banks is seen to be fluctuated. It does Nepalese investors are not treated fairly. The lack of financial knowledge and the market inefficiency has affected the market price of the share in all the sample banks.

In Nepal, there are only a few companies that pay divided to shareholders. Commercial banks especially joint venture banks have sufficient earnings. And they are able to pay dividend. But they are not following appropriate dividend policy. We now know that all banks have sufficient earnings but they are not distributing the dividend in equal proportion. They have not get uniformity of dividend payout ratio in these sample banks.

Paying dividend to shareholders is an effective way to lure new investors to invest in shares. Due to the division of earnings of a company (between dividend payout and

retention of earnings) its effect on the market price of shares is a crucial question. It is therefore, necessary that a wise policy should be maintained to balance between shareholders interest with that of corporate growth from internally generated funds. Since, shareholders have investment opportunities to employ of investment opportunities could not be used due to lack of investment opportunities should be better paid as dividends. So in conclusion it can be said that the dividend policy should be optimal which balances the opposing forces and maximizes stock price.

5.2 Conclusion

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

The above mentioned major findings lead this study to conclude that the sample banks have got sufficient earnings but some of the banks are paying high dividend while others are paying low dividend. There is lack of rules and regulations that bind companies to pay dividend every year. Not only the companies do not have dividend policy but also the government does not have any clear policy towards dividend to improve the efficiency of the companies. The number of companies cannot earn enough profit and bureaucrats accused the cause of inefficiency to managers, which is not sound. Other things remaining the same, comparatively dividend per share is not relatively more stable than the dividend payout ratio. That's why dividend per share and other variable have been highly fluctuated. There seems instability and inconsistency in dividend payment by the banks. The dividend amount paid by the banks appears very low. This indicates that banks have not considered price raise and inflation rate in economy. Another conclusion is that the market price of share is affected by dividend.

Shareholders in Nepal are not conscious. Taking the advantage of unconscious shareholders, the company management does not show the commitment promised in prospectors while raising capital. Promoters lure investors mentioning to pay attractive dividends, when company makes profit. However, in reality, most of the companies are deviated from their statement as promised in prospectus.

Every year EPS and MPS highly fluctuate. This short of fluctuation causes not to win public faith. A wise policy should be maintained between shareholder's interest and corporate growth from internally generated funds. The funds sometimes could not be used in case of lack of investment opportunities. In such a situation, distributed of dividend to shareholders is taken as the best because shareholders have greater investment opportunities to employ elsewhere. Lastly the sample banks have not clearly defined dividend policy and the have no followed the consistency in dividend distribution

policy so that there are various results and not in uniformity of DPSR of the sample banks.

5.3 Recommendations

1. The sampled banks are not adopting a fixed or defined dividend policy; they are adopting the dividend policy according to their requirement with change of time and situation. But most of the investors prefer defined dividend policy. Therefore, companies should clearly define their dividend policy and communicate to investors. Clearly defined dividend policy help to determine specific policy i.e. stable dividend or constant payout or low regular plus extra. This helps to investors in deciding whether to buy or not the share of a particular company and to build good image, stock market.

2. Most of the banks had great fluctuation in DPS, EPS, Dividend Yield and Dividend Payout Ratio, Price Earning and share Price in terms of coefficient of variation. Such fluctuation increase in risk position of investors. Therefore, company should try to stabilize these variables.

3. The legal rule regarding dividend should be clear for the smooth growth of the enterprises as well as growth of the nation economy. There is lack of rules binding companies to pay dividend. Some of the companies are unable for paying dividend, some are suffering from loss and there is an effort to minimize loss rather than payment of dividend. So, the government should act in favor of investors and bind these companies by special rules. There is not any other organization fully deployed to protect investor's interest. For this purpose GON, NEPSE, SEBON and other concerned parties should work together in favor of investors and bind their companies by separate rules.

4. Payment of dividend is neither static nor constantly growing. It is highly fluctuating. Such way of paying dividend could not impress the market positively. So, there, banks are advised to follow either statistic or constantly growing dividend policy. It will be better to fix and declare the amount of dividend in general meeting. This is important not only from the point of view of adequate return to shareholders but also to generate stable and increasing market value per share, long run survival of the banks, efficient management and socially acceptable distribution of income.

5. Formula of dividend policy will clearly guide the way of dividend distribution. The policy should determine whether the company is going to adopt stable dividend policy, constant payout ratio or low regular plus extra dividend. What should be the long run dividend payout ratio, either it is pure residual ratio theory, fixed dividend policy of smooth residual dividend policy, should have been clearly explained by the dividend policy.

6. In every organization the manager should be able to fulfill their duties and responsibilities and to protect shareholders interest but not for operation of the company desired by themselves. Organization should be formed by the intellectual shareholders for working in favor of Nepalese investors, which should be recognized by the government. The government should encourage this kind of organization to promote the activities and to protect the interest of investors. Investors should be well informed and communicated about dividend policy and other valuable information by arranging talk programme, publishing pamphlets and using public communication means for awareness of the investors.

7. Companies should have long term vision regarding earnings and dividend payment that helps to cope with challenging competitive situation of present world. Companies should define their vision clearly considering their future plans, expansion in business, future economy of the country etc. Various internal and external factors should be considered before taking decision.

8. Shareholders should be given an option to choose between stock dividend and cash dividend instead of declaring stock or cash dividend arbitrary. For this, dividend declaration should be proposed to the annual meeting of shareholders for approval.

9. Having seen the history of dividend paying companies, it is seen that the net profit after tax is the main base for distributing the dividend. Thus, it is suggested that the investor who want to purchase the equity share and immediate return should invest the share of higher profit earning companies.

10. Banks should have target rate of earnings, i.e. Profit planning and target payout ratio because the fluctuation in EPS and DPR may cause confusion on the mind of shareholders.

11. The legal rules and regulations must be in favor of investors to exercise the dividend practice and to protect the shareholders right.

12. 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.

13. Although the payout ratio of the sample firm is fluctuating year to year, there is no rational approach in deciding the payout. All the firms should analyze the internal rate of return and the cost of capital in deciding DPR, which helps to maximize the shareholder's wealth.

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APPENDIXES

Apendix-1

Table 1

Dividend Per Share for the year of JVCBs (DPSt) (in Rs)

Year Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	50	65	70	85	170	100	90	42.7784993	47.5316659
NSBI	8	0	0	10	60.18	0	13.03	23.5242301	180.538987
HBL	25	20	31.58	35	40	45	32.7633	9.29172033	28.360119
EBL	20	20	20	25	40	50	29.1667	12.8127541	43.9294425
Pooled Average = 41.24									

Table 2

EPS of Joint Venture Commercial Banks

Year Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	84.66	92.61	105.49	129.21	137.08	108.31	109.56	20.341646	18.5666721
NSBI	11.47	14.26	13.29	18.27	39.35	28.33	20.8283	10.8942194	52.3048063
HBL	49.45	49.05	47.91	59.24	60.66	62.74	54.8417	6.72671515	12.2657015
EBL	29.9	45.6	54.2	62.8	78.4	91.82	60.4533	22.3816413	37.0230061
Pooled Average = 61.42									

Table 3

MPS for Joint venture Commercial Bank (JVCB)

Year / Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	740	1000	1505	2240	5050	5275	2635	2024.79629	76.8423638
NSBI	255	307	335	612	1176	1511	699.333	524.926154	75.0609371
HBL	836	840	920	1100	1740	1980	1236	498.541874	40.3351031
EBL	445	680	870	1379	2430	3132	1489.33	1070.01003	71.8448991
Pooled Average = 1514.92									

Table 4
P/E Ratio for Joint Venture Commercial Banks

Year / Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	8.74	10.8	14.27	17.34	36.84	48.7	22.7816667	16.1999116	71.1094226
NSBI	22.24	21.54	25.21	33.49	29.89	53.34	30.9516667	11.8848398	38.3980608
HBL	16.19	17.12	19.2	18.57	28.69	31.56	21.8883333	6.53070109	29.8364475
EBL	14.9	14.9	16	22	31	34.1	22.15	8.53340495	38.5255302
Pooled Average = 24.443									

Table 5

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Dividend Payout Ratio of Joint Venture Commercial Banks

Year \ Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	59.05	70.19	66.36	65.78	102.13	92.33	75.9733333	17.1340488	22.5527142
NSBI	69.76	0	0	54.73	152.94	0	46.2383333	60.7034979	131.283923
HBL	50.55	40.77	65.91	59.08	65.94	71.72	58.995	11.5017542	19.4961509
EBL	66.88	43.85	36.9	39.8	51.02	54.45	48.8166667	11.053037	22.6419331
Pooled Average = 57.51									

Table 6
Market Price to Book Value Ratio of Joint Venture Commercial Banks

Year \ Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	2.77	3.32	4.46	5.88	12.08	14.9	7.235	5.04036407	69.6664005
NSBI	1.9	2	2.09	4.032	6.6	9.41	4.33866667	3.07893012	70.9648921
HBL	3.37	3.4	3.84	4.81	6.572	7.98	4.99533333	1.89473235	37.9300483
EBL	2.96	3.96	3.95	6.33	8.3	9.73	5.87166667	2.71362058	46.2155081
Pooled Average = 5.61									

Table 7

Dividend Yield Ratio of Joint Venture Commercial Banks

Year / Banks	2003	2004	2005	2006	2007	2008	$\bar{X}$		C.V
NABIL	6.75	6.5	4.65	3.79	2.77	1.89	4.39166667	1.96589335	44.764175
NSBI	3.13	0	0	1.63	5.12	0	1.64666667	2.1165601	128.536039
HBL	2.99	2.38	3.43	3.18	2.29	2.27	2.75666667	0.50666228	18.3795265
EBL	4.49	2.49	2.29	1.81	1.64	1.6	2.38666667	1.09114008	45.7181596
Pooled Average = 2.795									

Appendix 2
Simple Correlation and Regression Analysis between DPS and MPS

HBL

Year	DPS (X)	MPS (Y)	XY	X^2	Y^2
2003	25	836	20900	625	698896
2004	20	840	16800	400	705600
2004	31.58	920	29053.6	997.30	846400
2006	35	1100	38500	1225	1210000
2007	40	1740	69600	1600	3027600
2008	45	1980	89100	2025	3920400
n= 6	**X = 196.58**	**Y = 7416**	**XY=263953.60**	**X^2=6872.30**	**Y^2=10408896**

$$\bar{X} = 32.76, \bar{Y} = 1236$$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.9058$$

Coefficient of Determination (r^2) = 0.8205

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.0732$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.049$$

Independent Variable (X): DPS
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,

$$Y= n.a + b. \ X \text{ and } XY = a. \ X + b. \ X^2$$

Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 48.60$$

$$a = \bar{Y} - b\bar{X} = -356.29$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 236.144$$

NABIL

Year	DPS (X)	MPS (Y)	XY	X^2	Y^2
2003	50	740	37000	2500	547600
2004	65	1000	65000	4225	1000000
2004	70	1505	105350	4900	2265025
2006	85	2240	190400	7225	5017600
2007	140	5050	707000	19600	25502500
2008	100	5275	527500	10000	27825625
n= 6	**X=510**	**Y=15810**	**XY=1632250**	**X^2=48450**	**Y^2=62158350**

$\bar{X} = 85, \bar{Y} = 2635$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.8920$$

Coefficient of Determination $(r^2) = 0.7956$

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1 - r^2}{\sqrt{n}} = 0.083$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.0563$$

Independent Variable (X): DPS
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
    Y= n.a + b. X and   XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 56.55$$

$$a = \bar{Y} - b\bar{X} = -2171.75$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n - 2}} = 1023.47$$

EBL

Year	DPS (X)	MPS (Y)	XY	X^2	Y^2
2003	20	445	8900	400	198025
2004	20	680	13600	400	462400
2004	20	870	17400	400	756900
2006	25	1379	34475	625	1901641
2007	40	2430	97200	1600	5904900
2008	50	3132	156600	2500	9809424
n= 6	**X=175**	**Y=8936**	**XY=328175**	**X^2=5925**	**Y^2=19033290**

$\bar{X} = 29.167, \bar{Y} = 1489.33$

$$\text{Correlation coefficient } (r) = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.9853$$

Coefficient of Determination (r^2) = 0.9708

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1 - r^2}{\sqrt{n}} = 0.0119$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.0080$$

Independent Variable (X): DPS
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
Y= n.a + b. X and XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n. \sum XY - \sum X \sum Y}{n. \sum X^2 - (\sum X)^2} = 82.28$$

$a = \bar{Y} - b\bar{X} = -910.50$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 204.50$$

NSBI

Year	DPS (X)	MPS (Y)	XY	X^2	Y^2
2003	8	255	2040	64	65025
2004	0	307	0	0	94249
2004	0	335	0	0	112225
2006	10	612	6120	100	374544
2007	60.18	1176	70771.68	3621.63	1382976
2008	0	1511	0	0	2283121
n= 6	X=78.18	Y=4196	XY=78931.68	X^2=3785.63	Y^2=4312140

$$\bar{X} = 13.03, \bar{Y} = 699.33$$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.3929$$

Coefficient of Determination (r^2) = 0.1543

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.3452$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2328$$

Independent Variable (X): DPS
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
   Y= n.a + b. X and   XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 8.767$$

$$a = \bar{Y} - b\bar{X} = 585.10$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 539.69$$

Appendix 3

Simple Correlation and Regression Analysis between D/P Ratio and MMS

HBL

Year	D/PR(X)	MPS (Y)	XY	X^2	Y^2
2003	50.55	836	42259.80	2555.30	698896
2004	40.77	840	34246.80	1662.19	705600
2004	65.91	920	60637.20	4344.13	846400
2006	59.08	1100	64988	3490.45	1210000
2007	65.94	1740	114735.60	4348.08	3027600
2008	71.72	1980	142005.60	5143.76	3920400
n= 6	**X=353.97**	**Y=7416**	**XY=458873**	**X^2=21543.91**	**Y^2=10408896**

$\overline{X} = 58.995, \overline{Y} = 1236$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.7452$$

Coefficient of Determination (r^2) = 0.5554

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.1815$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.1224$$

Independent Variable (X): D/P Ratio

Dependent Variable (Y): MPS

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

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression Line)

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

Y= n.a + b. X and   XY = a. X + b. X^2

Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 32.30$$

$a = \overline{Y} - b\overline{X} = -669.53$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 371.66$$

EBL

Year	D/PR(X)	MPS (Y)	XY	X^2	Y^2
2003	66.88	445	29761.60	4472.93	198025
2004	43.85	680	29818	1922.82	462400
2004	36.9	870	32103	1361.61	756900
2006	39.8	1379	54884.20	1584.04	1901641
2007	51.02	2430	123978.60	2603.04	5904900
2008	54.45	3132	170537.40	2964.80	9809424
n= 6	X=292.9	Y=8936	XY=441082.8	X^2=14909.25	Y^2=19033290

$\overline{X} = 48.81, \overline{Y} = 1489.33$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.0821$$

Coefficient of Determination (r^2) = 0.0067

$$\text{Standard Error of Correlation Coefficient, S.E.} (r) = \frac{1-r^2}{\sqrt{n}} = 0.405$$

$$\text{Probable Error of Correlation Coefficient, P.E.} (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2735$$

Independent Variable (X): D/P Ratio
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,

   Y= n.a + b. X and   XY = a. X + b. X^2

Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 7.95$$

$$a = \overline{Y} - b\overline{X} = 1101.24$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 1192.27$$

NSBI

Year	D/PR(X)	MPS (Y)	XY	X^2	Y^2
2003	69.76	255	17788.80	4866.46	65025
2004	0	307	0	0	94249
2004	0	335	0	0	112225
2006	54.73	612	33494.76	2995.37	374544
2007	152.94	1176	179857.44	23390.64	1382976
2008	0	1511	0	0	2283121
n= 6	X=277.43	Y=4196	XY=231141	X^2=31252.47	Y^2=4312140

$\overline{X} = 46.23, \overline{Y} = 699.33$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.233$$

Coefficient of Determination $(r^2) = 0.0543$

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1 - r^2}{\sqrt{n}} = 0.3861$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.2604$$

Independent Variable (X): D/P Ratio
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
 Y= n.a + b. X and XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 2.01$$

$$a = \overline{Y} - b\overline{X} = 606.38$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n - 2}} = 570.78$$

NABIL

Year	D/PR(X)	MPS (Y)	XY	X²	Y²
2003	59.05	740	43697	3486.90	547600
2004	70.19	1000	70190	4926.64	1000000
2004	66.36	1505	99871.80	4403.64	2265025
2006	65.78	2240	147347.20	4327.01	5017600
2007	102.13	5050	515756.50	10430.54	25502500
2008	92.33	5275	487040.75	8524.83	27825625
n= 6	**X=455.84**	**Y=15810**	**XY=1363903.25**	**X²=36099.56**	**Y²=62158350**

$\bar{X} = 75.97, \bar{Y} = 2635$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.9383$$

Coefficient of Determination $(r^2) = 0.880$

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.0488$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0329$$

Independent Variable (X): D/P Ratio
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
   Y= n.a + b. X and   XY = a. X + b. X²
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 110.89$$

$a = \bar{Y} - b\bar{X} = -5789.68$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 782.62$$

Appendix 4

Simple Correlation and Regression Analysis between DY Ratio and MMS

NABIL

Year	DYR (X)	MPS(Y)	XY	X^2	Y^2
2003	6.75	740	4995	45.56	547600
2004	6.50	1000	6500	42.25	1000000
2004	4.65	1505	6998.25	21.62	2265025
2006	3.79	2240	8489.60	14.36	5017600
2007	2.77	5050	13988.50	7.67	25502500
2008	1.89	5275	9969.75	3.57	27825625
n= 6	X=26.35	Y=15810	XY=50941.10	X^2=135.04	Y^2=62158350

$$\bar{X} = 4.39, \bar{Y} = 2635$$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = -0.9292$$

Coefficient of Determination $(r^2) = 0.8635$

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.0557$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0376$$

Independent Variable (X): DY Ratio
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
   Y= n.a + b. X and   XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = -957.12$$

$$a = \bar{Y} - b\bar{X} = 6836.76$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 840.52$$

EBL

Year	DYR (X)	MPS(Y)	XY	X^2	Y^2
2003	4.49	445	1998.05	20.16	198025
2004	2.94	680	1999.2	8.64	462400
2004	2.29	870	1992.3	5.24	756900
2006	1.81	1379	2495.99	3.28	1901641
2007	1.64	2430	3985.20	2.69	5904900
2008	1.60	3132	5011.20	2.56	9809424
n= 6	**X=14.77**	**Y=8936**	**XY=17481.94**	**X^2=42.57**	**Y^2=19033290**

$$\bar{X} = 2.46, \bar{Y} = 1489.33$$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = -0.7573$$

Coefficient of Determination (r^2) = 0.5734

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.1741$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.1175$$

Independent Variable (X): DY Ratio
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
  Y= n.a + b. X and   XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = -727$$

$$a = \bar{Y} - b\bar{X} = 3277.75$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 783.05$$

NSBI

Year	DYR (X)	MPS(Y)	XY	X^2	Y^2
2003	3.13	255	798.15	9.80	65025
2004	0	307	0	0	94249
2004	0	335	0	0	112225
2006	1.63	612	977.56	2.65	374544
2007	5.12	1176	6021.12	26.21	1382976
2008	0	1511	0	0	2283121
n= 6	X=9.88	Y=4196	XY=7816.83	X^2=38.66	Y^2=4312140

$\overline{X} = 1.64, \overline{Y} = 699.33$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.163$$

Coefficient of Determination (r^2) = 0.0267

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.397$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2680$$

Independent Variable (X): DY Ratio
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
  Y= n.a + b. X and   XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 40.53$$

$a = \overline{Y} - b\overline{X} = 632.87$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 578.75$$

HBL

Year	DYR (X)	MPS(Y)	XY	X^2	Y^2
2003	2.99	836	2499.64	8.94	698896
2004	2.38	840	1999.20	5.66	705600
2004	3.43	920	3155.60	11.76	846400
2006	3.18	1100	3498	10.11	1210000
2007	2.29	1740	3984.60	5.24	3027600
2008	2.27	1980	4494.60	5.15	3920400
n= 6	**X=16.54**	**Y=7416**	**XY=19631.64**	**X^2=46.87**	**Y^2=10408896**

$\overline{X} = 2.76, \overline{Y} = 1236$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = -0.6450$$

Coefficient of Determination (r^2) = 0.416

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.2384$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.1608$$

Independent Variable (X): DY Ratio
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
  Y= n.a + b. X and XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = -636.84$$

$a = \overline{Y} - b\overline{X} = 2993.68$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 421.32$$

Appendix 5

Simple Correlation and Regression Analysis between PE Ratio and DPS

HBL

Year	PER (X)	DPS (Y)	XY	X²	Y²
2003	16.91	25	422.75	285.95	625
2004	17.12	20	342.40	293.09	400
2004	19.20	31.58	606.336	368.64	997.30
2006	18.57	35	649.95	344.84	1225
2007	28.69	40	1147.60	823.12	1600
2008	31.56	45	1420.20	996.03	2025
n= 6	**X=132.05**	**Y = 196.58**	**XY=4589.24**	**X²=3111.68**	**Y²=6872.30**

$\overline{X} = 22.01, \overline{Y} = 32.76$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.8826$$

Coefficient of Determination $(r^2) = 0.7790$

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.0902$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.06087$$

Independent Variable (X): PE Ratio
Dependent Variable (Y): DPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
   Y= n.a + b. X and   XY = a. X + b. X²
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 1.279$$

$$a = \overline{Y} - b\overline{X} = 4.61$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 4.91$$

EBL

Year	PER (X)	DPS (Y)	XY	X^2	Y^2
2003	14.9	20	298	222.01	400
2004	14.9	20	298	222.01	400
2004	16	20	320	256	400
2006	22	25	550	484	625
2007	31	40	1240	961	1600
2008	34.10	50	1705	1162.81	2500
n= 6	**X=132.90**	**Y=175**	**XY=4411**	**X^2=3307.83**	**Y^2=5925**

$\bar{X} = 22.15, \bar{Y} = 29.17$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.97825$$

Coefficient of Determination $(r^2) = 0.9568$

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.0176$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0119$$

Independent Variable (X): PE Ratio
Dependent Variable (Y): DPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
Y= n.a + b. X and XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 1.4687$$

$a = \bar{Y} - b\bar{X} = -3.36$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 2.9396$$

NSBI

Year	PER (X)	DPS (Y)	XY	X^2	Y^2
2003	22.24	8	177.92	494.62	64
2004	21.54	0	0	463.97	0
2004	25.21	0	0	635.54	0
2006	33.49	10	334.9	1121.58	100
2007	29.89	60.18	1798.78	893.41	3621.63
2008	53.34	0	0	2845.15	0
n= 6	X=185.71	Y=78.18	XY=2311.60	X^2=6454.28	X^2=3785.63

$\bar{X} = 30.95, \bar{Y} = 13.03$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = -0.0774$$

Coefficient of Determination $(r^2) = 0.0060$

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1 - r^2}{\sqrt{n}} = 0.4058$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.2737$$

Independent Variable (X): PE Ratio
Dependent Variable (Y): DPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
  Y= n.a + b. X and   XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = -0.1532$$

$a = \bar{Y} - b\bar{X} = 17.77$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n - 2}} = 26.22$$

NABIL

Year	PER (X)	DPS (Y)	XY	X²	Y²
2003	8.74	50	437	76.68	2500
2004	10.8	65	702	116.64	4225
2004	14.27	70	998.9	203.63	4900
2006	17.34	85	1473.9	300.67	7225
2007	36.84	140	5157.6	135.18	19600
2008	48.70	100	4870	2371.69	10000
n= 6	**X=136.69**	**Y=510**	**XY=136394**	**X²=4426.21**	**Y²=48450**

$$\overline{X} = 22.78, \overline{Y} = 85$$

$$\text{Correlation coefficient } (r) = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} = 0.7811$$

Coefficient of Determination (r^2) 0.6102

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1 - r^2}{\sqrt{n}} = 0.1591$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.1073$$

Independent Variable (X): PE Ratio
Dependent Variable (Y): DPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,

Y= n.a + b. X and XY = a. X + b. X²

Solving these two normal equations, we get

$$b = \frac{n. \sum XY - \sum X \sum Y}{n. \sum X^2 - (\sum X)^2} = 1.54$$

$$a = \overline{Y} - b\overline{X} = 49.92$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a \sum Y - b \sum XY}{n - 2}} = 24.98$$

Appendix 6

Simple Correlation and Regression Analysis between EPS and MPS

NABIL

Year	EPS(X)	MPS(Y)	XY	X^2	Y^2
2003	84.66	740	62648.40	7167.31	547600
2004	92.61	1000	92610	8576.6121	1000000
2004	105.49	1505	158762.45	11128.14	2265025
2006	129.21	2240	289430.40	16695.22	5017600
2007	137.08	5050	692254	18790.93	25502500
2008	108.31	5275	571335.25	11731.06	27825625
n= 6	X=657.36	Y=15810	XY=1867040.5	X^2=74089.27	Y^2=62158350

$$\bar{X} = 109.56, \bar{Y} = 2635$$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.6550$$

Coefficient of Determination (r^2) = 0.429

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1 - r^2}{\sqrt{n}} = 0.2330$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = 0.1572$$

Independent Variable (X): EPS
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
  Y= n.a + b. X and   XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X\sum Y}{n.\sum X^2 - (\sum X)^2} = 65.20$$

$$a = \bar{Y} - b\bar{X} = -4508.31$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n - 2}} = 1710.53$$

NSBI

Year	EPS(X)	MPS(Y)	XY	X^2	Y^2
2003	11.47	255	2580.75	131.56	65025
2004	1426	307	4377.82	203.35	94249
2004	13.29	335	4452.15	176.62	112225
2006	18.27	612	11181.24	333.79	374544
2007	39.35	1176	46275.60	1548.42	1382976
2008	28.33	1511	42806.63	802.59	2283121
n= 6	X=124.97	Y=4196	XY=111674.19	X^2=3196.34	Y^2=4312140

$\overline{X} = 20.83, \overline{Y} = 699.33$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.8491$$

Coefficient of Determination (r^2) = 0.7210

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.1139$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0768$$

Independent Variable (X): EPS

Dependent Variable (Y): MPS

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

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression Line)

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

  Y= n.a + b. X and   XY = a. X + b. X^2

Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 40.91$$

$$a = \overline{Y} - b\overline{X} = -152.88$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 310.26$$

HBL

Year	EPS(X)	MPS(Y)	XY	X^2	Y^2
2003	49.45	836	41340.20	2445.30	698896
2004	49.05	840	41202	2405.90	705600
2004	47.91	920	44077.20	2295.37	846400
2006	59.24	1100	65164	3509.38	1210000
2007	60.66	1740	105548.40	3679.64	3027600
2008	62.74	1980	124225.20	3936.31	3920400
n= 6	**X=329.05**	**Y = 7416**	**XY=421557**	**X^2=18271.89**	**Y^2=10408896**

$\overline{X} = 54.84, \overline{Y} = 1236$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.8858$$

Coefficient of Determination (r^2) = 0.7846

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.0879$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0593$$

Independent Variable (X): EPS

Dependent Variable (Y): MPS

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

Where,

a = Regression Constant

b = Regression Coefficient (Slope of the Regression Line)

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

Y= n.a + b. X and XY = a. X + b. X^2

Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X \sum Y}{n.\sum X^2 - (\sum X)^2} = 65.64$$

$$a = \overline{Y} - b\overline{X} = -2363.92$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 259.19$$

EBL

Year	EPS(X)	MPS(Y)	XY	X^2	Y^2
2003	29.9	445	13305.5	894.01	198025
2004	45.6	680	31008	2079.36	462400
2004	54.2	870	47154	2937.64	756900
2006	62.8	1379	86601.20	3943.84	1901641
2007	78.4	2430	190512	6146.56	5904900
2008	91.82	3132	287580.24	8430.91	9809424
n= 6	X=362.72	Y=8936	XY656160.94	X^2=24432.32	Y^2=19033290

$\bar{X} = 60.45, \bar{Y} = 1489.33$

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}} = 0.9683$$

Coefficient of Determination $(r^2) = 0.7846$

$$\text{Standard Error of Correlation Coefficient, S.E. } (r) = \frac{1-r^2}{\sqrt{n}} = 0.0255$$

$$\text{Probable Error of Correlation Coefficient, P.E. } (r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0172$$

Independent Variable (X): EPS
Dependent Variable (Y): MPS
Regression Equation of Y on X is, Y = a + bX
Where,
a = Regression Constant
b = Regression Coefficient (Slope of the Regression Line)
According to the principle of least spares, two normal equations for estimating two numerical constants a and b are given by,
  Y= n.a + b. X and XY = a. X + b. X^2
Solving these two normal equations, we get

$$b = \frac{n.\sum XY - \sum X\sum Y}{n.\sum X^2 - (\sum X)^2} = 46.29$$

$$a = \bar{Y} - b\bar{X} = -1309.09$$

$$\text{Standard Error of Estimate (SEe)} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}} = 299.01$$