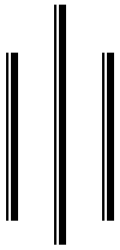
DIVIDEND POLICY AND ITS IMPACT ON MARKET PRICE OF STOCK



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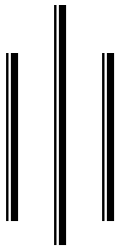

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In partial fulfillment of the requirements of the degree of

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VIVA - VOCE SHEET

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for

Master's Degree in Business Studies (M.B.S)

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Declaration

I hereby declare that this thesis work entitled **"DIVIDEND POLICY AND ITS IMPACT ON MARKET PRICE OF STOCK"** submitted to the office of the Dean, Faculty of Management, Tribhuvan University is my own original work which has been prepared for the requirement of Master of Business Studies (M.B.S) under the supervision of Dr. Keshav Prasad Gadtaula, Lecturer of Post Graduate Campus, Biratnagar.

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LIST OF ABBREVIATION

a	:	Constant Number
A.D.	:	Anno Domino
b	:	Regression Co-efficient
C.V.	:	Co-efficient of Variation
d. f.	:	Degree of Freedom
DPS	:	Dividend Per Share
EBL	:	Everest Bank Limited
SBL	:	Siddhartha Bank Limited
HBL	:	Himalayan Bank Limited
NIC	:	Nepal Industrial and Commercial Bank Limited
Ed.	:	Edition
eg.	:	For example
EPS	:	Earning Per Share
F/Y	:	Fiscal Year
i.e.	:	That is
MPS	:	Market Price Per Share
DPR	:	Dividend Payout Ratio
DY	:	Dividend Yield
P/E	:	Price Earning
P/E Ratio	:	Price Earning Ratio
NWPS	:	Net Worth Per Share
n	:	Number of Items/observation
NEPSE	:	Nepal Stock Exchange
No.	:	Number
P.E.	:	Probable Error
Re.	:	Rupee
Rs.	:	Rupees
S.D.	:	Standard Deviation
S.N.	:	Serial Number
SEBON	:	Security Board of Nepal
SEE	:	Standard Error of Estimation

VIZ.	:	Namely
Vol.	:	Volume
r	:	Correlation Coefficient
r^2	:	Coefficient of Multiple Determination
www	:	World Wide Web

CHAPTER-I

INTRODUCTION

1.1 General Background of the study

Nepal is a least developed as well as landlocked country due to which it has been facing different types of obstacle in business sectors. Nepal doesn't have its own sea port. So, it has been using the sea port of India for export and import business. Nepal is surrounded by the two economic superpower of the world i.e. China and India but still Nepal could not develop itself. More than 38% of the populations lie below the poverty line. The agro-dominated economy is further worsened by complex geographical situation. The main factors that make the slow pace of development in Nepal are lack of institutional commitment, erratic government policies, political instability etc

The globalization and liberalization process have surmounted a worldwide pressure on planners and policy makers to design for the rapid growth. This requires a sufficient and high amount of investment, which is possible through chanalization of what the people save.

Realizing the same, the government has given primary attention on the development of the banking and insurance sectors, so that they perform two major responsibilities:

- Generating income through the promotion of trade, commerce and industry.
- Trapping the public saving to raise the sufficient funds for investment.

Since FY 1987/88, a significant step towards financial liberalization was undertaken by His Majesty's Government with the view of expedites the pace of economic development under the structural adjustment program. The liberalization policy of His Majesty's Government of Nepal has encouraged the private sector to invest in various fields, which supports the nation's overall economic growth. The liberalization policy has attracted not only Nepalese investors but also motivated the foreign investors to work in a partnership basis with Nepalese investors.

The growing influence of liberal economic policies in early 80s resulted into a global move for economic liberalization and globalization. This influence in Nepal, first of all appeared in the form of Nepal's liberal policies in the banking sector. The government of Nepal introduced financial sector reforms policy in 1980. This encouraged the healthy competition in the financial sector as well as it allowed the entry of foreign banks in the Nepalese market in the form of joint venture banks. His majesty's Government of Nepal permitted to establish private commercial banks with foreign investment in this sector.

The commercial banking industry has remarkably developed in a short span of time of one decade. This development has helped to mobilize the internal resources as well as the external funds of foreign investors for the economic development of the nation.

The advantage of joint venture and private banks in Nepal has many consequences apart from performing the role of commercial banks. They introduced new philosophy and modern banking practices in Nepal. The grow of joint venture banks increase dramatically after the restoration of democracy when government adopt liberal and market oriented policy. The establishment of joint ventures after restoration of democracy in 1990 has been contributing to a gradual development of banking culture i.e. issuing credit cards, tele-banking services etc. this has drawn a heavy attention from non-business or general public towards commercial banks.

It is always discussed that the participation of the private sectors plays even more important role for any of the economic development. But, however even with the rapid development views of financial institutions, Nepal has not been able to achieve the desired income so far which is due to the poor capital market situation of the nation & due to the initial stage of modern economy.

Among these circumstances, capital market & its extensity also play great roles. Capital markets generate & liquidate the security as per the requirements. So is the reason extension of capital market is only the way to productive mobilization of the funds. But unfortunately, Nepalese capital market has not efficient communication net work even today. Even though, it is hoped that Nepalese capital market will be moving towards efficiently in the earlier future.

In Nepal, the history of capital market began with the flotation of shares of Biratnagar Jute Mills Limited and Nepal Bank Limited in 1937 A.D. introduction of the company act in 1964, the first issuance of government bond in 1964 and the establishment of Securities Exchange Centre Limited. In 1976 were other significant development relating to capital market. When Security Exchange Centre converted into Nepal Stock exchange (NEPSE) in 1993, the objectives of this institution becomes; to import free marketability & liquidity to the government & corporate securities by facilitating transaction in its only trading floor through market intermediaries' i.e. brokers as well as market makers.

NEPSE is a non-profit organization, operating under securities exchange act, 1983. NEPSE opened its trading floor on January 13th, 1994; Members of NEPSE are permitted to act as intermediaries in buying & selling of securities of government bonds & listed companies securities. At present there are 24 member's brokers & 2 market makers, who operate on the trading floor as per the securities exchange act, 1983, rules & bylaws.-(*www.nepalstock.com, 2011- March).*

It is heard radio, saw television and read different types of news papers every day. All the news channels have been discussing about the fluctuation of shares (stock) prices in the market. If the demand of commodity increases where as the supply of that commodity decreases then the price of the commodity increases on the other hand, if demand of commodity decreases and supply of that commodity increases than the price of that commodity also decreases. In the same way, if the investors are increased (means demand of the security increases) where as the sellers of the security (supply of security) decreases than the price of securities decreases and vice-versa. Fluctuation in security prices is just because of demand and supply of shares. The curiosity about the factor that effect the demand and supply of a company's securities may arises.

The main objectives of the investors are to earn (reap) profit. Dividend is a part of a company's profit that is distributed to the shareholders from company's net profit. The word dividend comes from Latin word 'Dividendum' meanings the thing which is to be divided among all. Divided are payments made by a corporation to its shareholders members. It is the portion of corporate profits paid out to stockholders. When a corporation earns a profit or surplus that money can be put to two uses; it can either be re-invested in the business (called retain earnings), or it can be paid to the shareholders

as a dividend. Many corporations retain a portion of their earnings and pay the remainder as dividend (*www.wikkipedia.com).*

For joint stock Company, a dividend is allocated as a fixed amount per share. Therefore a shareholder receives a dividend in proportion to their shareholding. For the joint stock company paying dividends is not an expense; rather, it is the division of assets among shareholders. Public company usually pays dividends on a fixed schedule, but may declare a dividend at any time, sometimes called a special dividend to distinguish it from a regular one.(*www.wikkipedia.com).*

Dividends are usually settled on a cash basis, as a payment from the company to the shareholders. They take other forms, such as store credits (common among retail consumers' cooperatives) & shares in the company (either newly created shares or existing shares bought in the market). Further, many public companies offer dividend reinvestment plans, which automatically use the cash dividend to purchase additional shares for the shareholders. (*www.wikkipedia.com).*

In 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 the firm etc. like other major decisions of the firm i.e. investment and financing decision, the dividend decision has major role in any organization.

The dividend payout reduce 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. where as the internal source, is the earning retained after the payment of dividend. Thus the amount of internal financing is largely dependent upon the dividend policy adopted by the firm. For the existing firm, it is very necessary to analyze which source is more profitable because the cost of external financing is relatively high as compared the retained earning due to the extra cost required.

Retained earnings are used for making investment in favorable investment opportunities, which in turn helps to increase the growth rate of the firm. The main controversy between the shareholders and management is the rate of dividend because shareholders want more dividends and management wants more amounts to retain to the company for the investment purpose. Dividend policy decision is the major financial decision of the firm, which determines further capital structure and growth of the firm.

In 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 who pay dividend. But after the establishment of joint venture companies, there is a new trend of distributing dividends. Dividend distribution trend has not only attracted the investor but has also made the management conscious about the policy regarding the payment of dividend.

Profile of Banks

NABIL Bank was established on July 12, 1984 through a joint venture with Dubai Bank Limited under a Technical Service Agreement in Nepal. The Bank commenced with a team of about 50 staff member and Rs.28 million as capital. Today it has 48 branches all around the country and its market value is 47.30 billion and the total number of permanent staff is 505 with 3.60 billion capitals. Out of the total share capital 70% are hold by the promoters and remaining 30% from general public. Out of the promoter shareholders 50% is hold by NB international.

Nepal industrial and commercial Bank Limited (NIC Bank) commenced its operation on 21 July, 1998 Biratnagar. The Bank was promoted by some of the prominent business houses of the country. The current shareholders pattern of the Bank constitutes promoters holding 51% of the share while 49% is held by the general public. NIC Bank has over 34000 shareholders. The share of the Bank is actively traded in Nepal stock exchange with current market capitalization of about NPR 10493 million. The Bank has grown rapidly with 28 branches throughout the country.

Siddhartha banks limited (SBL) commenced operation in 2002. The Bank has promoted by a group of highly reputed Nepalese dignitaries having wide commercial experience.

The Bank provides a full range of commercial banking service through 39 branches across Nepal. In total capital of SBL 70% are from Promoters and remaining 30% are collected by issuing public share.

Everest Bank limited (EBL) started its operations in 1994 with a view and objective of extending professionalized and efficient banking services to various segments of the society. Panjab National Bank is a joint venture partner of Everest Bank Limited which holds 20% equity of the Bank and out of the remaining 50% are from Nepalese Promoters and remaining 30% are from general public. EBL gives variety of services through 40 branches across Nepal.

Himalayan Bank Limted (HBL) was established in 1993 in joint venture with Habib Bank Limted of Pakistan. HBL provided varieties of services through its 35 branches around the country. Out of total share capital 85% are from promoters and remaining 15% from general public. Out of the promoter shareholders, 20% shares are held by Habib Bank Limited and other remaining from other licensed institution and reputed business houses.

1.2 Focus of the study

In any 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 Nepalese firm in regards to the dividend policy and impact of dividend on MPS. But for whole these purpose different other studies are going to be done i.e. comparison of earning per share (EPS), dividend per share (DPS), market price per share (MPS) and others as per the requirement with respect to the sample firm. The study will be more focusing on the dividend policy and MPS; however the quantitative discussion will be submitted including the Nepalese practices. The relationship between different variables will be individually and combine analyzed in order to state the particular suggestion. In the same way, the study has focused on distribution of dividend by Nepalese firms and impact of dividend policy on MPS, for this I have taken last five years data of sample banks.

1.3 Statement of the problems

Dividend policy itself is not well-known subject or practice by large numbers of financial community even today. It is still a fundamental as well as controversial area of managerial finance. The effect of dividend policy on a corporation's market value of shares is a subject of ling standing argument. But still there is no single conclusive result regarding the relationship between the dividend payment and market price of the share.

Dividend is the most stimulating factor for the investment on shares of the company is thus desirable from the stockholder's point of view. In one hand the payment of dividend makes the investors happy. But in the other hand the payment of dividend decreases the internal financing required for making investment in good opportunities. This will hamper the growth of the firm. There may be various factors that cause fluctuation in the share prices.

Earnings are also treated as financing sources of the firm. The firm retains the earning; its repercussion can be seen in many factors such as decreased leverage ratio, expansion of activities and increase in profit in succeeding years. Whereas if firm pays dividend, it may need to raise capital through capital market, which diluted the ownership control. On condition the firms takes loans or raise debenture, it will affect on risk characteristics of the firm. Therefore, there are many dimensions to be considered on dividend theories, policies and practices.

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. This trend will remain to continue until the investors are satisfied by the decision made by the management of these companies. Dividend is the most inspiring aspect for the investment in the shares of various companies for an investor. Even is dividend affects the firm's value, unless management knows exactly how they affect value, there is not much that they can do to increase the shareholder's 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.

Thus, this study seeks to answer the following questions:

- What are the implications of dividend on market price of share?
- What are the factors that affect the dividend and valuation of the firms?
- What is the relationship between dividend and stock price?

1.4 Objectives of the study

The major objective of the study is to obtain in-depth knowledge about the impact of dividend policy adopted by the firm to its market price of share. Some of the important objectives of the study can be listed as follows.

- To find out the relationship of dividends with earnings, market price of share and net worth.
- To find out the impact of dividend policy on market price of stock.
- To provide the workable suggestion to the policy makers and executives to overcome the various issues and gaps.
- To compare the performance of sample Banks on the basis of dividend policy they have adopted.

1.5 Significance of the study

Now a day's people are attracted to invest in shares for the purpose of getting more return as well as to maximize their wealth. So the dividend policy has become an effective way to attract new investors, to keep present investors happy and to maintain goodwill of the company. When a new company floats shares in thee capital market, very big congregation gathers to apply for owner's certificate. It indicates people's expectation on higher return of investment in shares. While investing in shares, the investor forgoes opportunity income that he could have earned. In capital market, the return can be earned in two ways;

- By means of dividend

- By capital gains i.e. increase in share price.

The dividend is most sensitive element in the area of investment in the common stock. If the market does not receive its expected dosage, stock price will suffer. Dividend announcement also help to solve symmetric information problem between management and shareholders. Besides this, shareholders usually think that dividend is less risky than capital gain and they use the announcement of changes in dividend payment in assessing the value of a security.

For the management of any organization, examination of the relationship between dividend and market price of share may become an important guideline in setting suitable dividend policy. Major focus of this study is to trace the impact of dividend policy adopted by the company on the market price of the share as well as the overall value of the firm. This study also provides relevant and pertinent literature for future research on the area of dividend policy of managerial finance.

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.

1.6 Limitations 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 has the signaling effects towards market price of the shares.

To make the study more specific only few corporation are chosen for the study. This study is basically for the partial fulfillment for **MBS,** program. So following limiting factor retrains the study:

- Most of the data used in the research are of secondary nature; therefore there might be reporting errors.

- The balance sheet, profit and loss account and accompanying notes have been basically considered as the subject matters of the study and they are assumed to be correct and true.
- The factors like cash dividend, earnings and the market price of the shares are considered under study.
- Due to annual distribution system in Nepal, dividend has not been considered for calculation of holding monthly periodic return.
- The study covers only five years period, i.e. from FY2006/2007 to 2010/2011.
- The study will confine to select only few corporations.
- The study is for the partial fulfillment of the Masters of Business Studies (**MBS**). So, time and cost limits retrain the study.

1.7 Organization of the study

The study will be organized into five chapters:

Chapter I: Introduction

This chapter deals with subject matters of thee study consisting background of the study, focus of the study, and statement of the problem, objective of the study and significance of the study.

Chapter II: Review of literature

This chapter deals with review of the different literature of the study field. Therefore it includes conceptual framework along with the review of major books, journal, research works and thesis etc.

Chapter III: Research Methodology

This chapter deals with 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 presentation and analysis

This chapter deals with analysis and interpretation of the data using financial and statistical tools describe in chapter three. Similarly this chapter also includes the major

findings of the study.

Chapter V: summary, Findings, Conclusion and Recommendations

This chapter deals with summary of the study held, the conclusion made ultimately and possible suggestions.

CHAPTER-II

REVIEW OF LITERATURE

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

This research aims to analyze the dividend policy and its impact on market price of stock of joint venture commercial banks especially five commercial bank viz. Nepal Everest Bank Ltd. (EBL), NABIL Bank Ltd (NABIL), Himalayan Bank Ltd. (HBL), NIC Bank Ltd. (NIC) and Siddhartha Bank Ltd. (SBL). For this purpose, it is helpful to review related literatures in the concerned area, which will help to get clear ideas, opinions and other concepts. 'What other has said? What other has done? What other has written? All these and other related questions are reviewed, which has provided useful inputs in this research work. This chapter emphasizes on the literatures, which are concern with this connection. Therefore, in this chapter, conceptual frameworks given by different authors and intellectuals on this area, books, journals, research books, and previous thesis related to dividend, dividend policies and its impact on market price are reviewed. Moreover, rules regarding to dividend policy are reviewed and an attempt has been made to present them properly.

2.1 Conceptual Framework

2.1.1 Background

In simple words, dividend refers to a portion of earning, which is distributed to shareholders in return of their investment in share capital. Dividend policy of a firm is one of the third major decision making area of financial management. It is regarded as a tool to determine the appropriate allocation of profits between dividend payments and the amount to be retained in the firm. It deals with how much should pay to shareholders from the earnings. Dividend payout reduces the amount of earnings retained in the business, which affects the internal financing of the firm. Generally, dividend is paid in cash because of which the assets (cash balance) of the firms is reduced but by the payment of dividend enterprises can collect the funds to finance its investment opportunity. Dividend behavior affects the financial structure, the flow of funds,

corporate liquidity and investor's attitudes. It is a matter of interest for all the stakeholders. Thus, it is one of the central decision area related to policies seeking to maximize the value of firm's common stock.

Expected cash dividends are the key return variable from which owners and investors determines share price. So, it is necessary for the enterprise to adopt an effect and relevant divided policy. Managers of the enterprises has o meet periodically to decide whether to pa dividends and to determine the amount and firms of dividend.

Iqbal Mathur defines the dividend and dividend policy as: "Dividend refers to that portion of retained earnings that is paid to stockholders while dividend policy refers to the policy or guidelines that management uses in establishing the portion of retained earnings that is to be pad in dividends".(*Mathur: 1999: 297)*

"Dividend policy is a consistent approach t the distribution versus retention decision. Adequate dividend determines the amount of earnings to retain and payout by the firm. A dividend payment is distribution to the shareholder of something belonging to the corporation and specifically to the stockholder themselves as owner of corporation."(*Pearson, Charles & Donaldson: 1966: 278)*

"Dividend Policy determines the division of earnings between payments to Stockholders and reinvestment in the firm. Retained earnings are one of the most significant sources of funds for financing corporate growth, but dividends constitute the cash flows that accrue to stockholders."(*Western & Copland: 1990: 181)*. Thus, the dividend payout reduces the amount of retained earnings in the firm and affect total amount of internal financing. The decision depends upon the objective of the management for wealth maximization.

What and how much is desirable to pay dividend, is always a matter of dispute because shareholders expect higher dividend from company, as it tends to increase their current wealth whereas retention of earnings is desirable for the growth of firm. These two objectives of the dividend policy are always in conflict. There is not yet consensus on whether the firms should follow certain pattern to distribute dividend and retain earnings. However, there is different decision models developed to analyze the situation and reach decision. These decision models are conflicting and consider the different aspects of the

firm. One school of thought argues that dividend payment has no impact on valuation of a firm or firm stock prices whereas other theories of dividend decision argues that dividend to be active variable in valuation of firm and it effects firms market price of stock.

"Dividend policy is recoding evidence of shareholders filling case against the corporation imposing restriction in dividend payment as a matter of nature of separation between ownership and control. Since, dividend would be more attractive to shareholders. One might think that there would be tendency for corporation to increase distribution but one might well equally pressure the gross dividend would be reduced somewhat with and increase in retained earnings for the corporation."(*Smith: 1977: 90-91)*

"Dividend policy is a wise policy to maintain a balance between shareholders interests with that the corporation growth from internally generated fund."(*M.K. Shrestha: 1981: 19-20).*

"The fund could not be used up due to lack of investment opportunities, should be better to pay as dividends since shareholders might have investment opportunities to employ the fund elsewhere. Financial management is therefore concerned with activities of corporation that affects the well-being of shareholders. That well-being can be partially measured by the dividends received but a more accurate measurement is the market value of stock."(*William: 1973: 1).*

The dividend policy adopted by the firm should be such that it strikes a proper balance between the financial decision and wealth maximization decision. There is an inverse relation between retain earnings and cash dividend. When the firm retained the earnings providing necessary equity, the amount of dividend decreased, which may affects the market price of share adversely. However, this leads to increase the future earnings per share. Thus, dividend directly or indirectly determined and affects the maximization of the wealth of owners or shareholders.

If the company pays the earnings as a dividend, they are beneficial directly and if

company retains in the business to finance the business opportunity they are benefited indirectly through the investment of market price of share i.e. capital gain. In both of the case shareholders get benefit. But how much should be retained in business is not a simple question. Since dividends would be more attractive to shareholder, one might not hesitate to say that dividends weight more than retention in the perception of the shareholders. But one might equally pressure that gross dividend would be reduced somewhat with an increase in net after tax dividend. Because tax dividend still a major decision of financial manager available to shareholders so it would be wise policy to maintain balance between shareholders interest with that of corporate growth from initially generated fund. So n conclusion it can be said that dividend decision is a major decision of financial management.

Thus this study aims to focus on all the relevant factors, prevailing practice of taking dividend policy and the effect of dividend policy on market price of stock of selected joint venture banks.

2.1.2. Statutory Limitations of dividends

Often an uninformed criticism is made that corporate profits should not be allowed to be fritter away by the distribution of large dividends. This impression has gained currency mostly due to dividends being declared at seemingly large percentage in relation to companies' paid-up capital, which is not the correct base for calculation. Dividends, as a matter of relit, should be examined in relation to the net worth or total capital employed in an undertaking.

Investors with a view to earning a good return on their savings contribute catal in companies. Corporate managements can hardly afford to this legitimate expectation of he shareholders. The very basis of equity investment is the investor's expectation that he will receive back as dividend reasonable share of profits, not merely by way of interest on capital but also a return for risk bearing implicit in such investment.

Moreover, when there is no guarantee of a minimum dividend the question of maximum it would certainly create a feeling in the investors rightly expect a large return in times of

higher profits since they have to be contended with inadequate return or even no return of times of adversity. The hazards of industrial investment are long and real and frequently the waiting involved is most trying. Good years are inevitably followed by lead years. Such us and downs are inherent in equity investment. To fetter investors' expectation by arbitrary government action is to drive them away from venture capital.

Any attempt to formulate public policy of control on dividends that fails to take into account the basic character of equity investment would be a retrograde step. It would upset the whole capital market and promote many undesirable trends in the finance for the private sector. It would also encourage wasteful expenditure on the part of the corporate undertaking. Instead of encouraging investment through retained earnings, it may act as an impediment to economic growth.

The normal method of dealing with high dividends is taxation. The ceiling of dividends will have disastrous effects in the share market and act as a disincentive for future investment in the private sector. As a rule, the decision regarding dividend distribution may well be left to the corporate management to deal with it in a flexible manner. Dividend distribution is not an isolated but an integral problem of joint-block enterprise. It cannot be an industry is itself a difficult problem, which is only made more difficult if arbitrary action is taken to limit dividend distribution.
Most companies prefer to depend upon internal resources for expansion rather than rely on costly borrowed funds. Secondly, liberal dividends have not been paid in order to minimize the tax liability of big and controlling shareholders who have to pay tax on their dividend income at a rate higher than that on corporate profits. Thirdly, the right capital market conditions have given an encouragement to the companies to depend more and more upon internal resources fourthly, the stringent credit policy as also led there to reduce dividends in order to maintain high liquidity.

In fact, there has grown a genuine grievance on the art of the shareholder that the full benefits of expansion financed by retained profits are not assed on to them in the form of a fair return on their investments.

There has been a den and for higher dividends on the part of shareholders in several leading companies which have responded to this demand by stepping up their dividends.

Attention of management has been drawn to the unfair dividend policies in the conferences of shareholders. The shareholders' associations can play an important role in keeping an eye of vigilance on management to follow correct dividend policies.

2.1.3. Concept of Dividend

The various concept of dividend, defined in various books of finance, are discussed below:

- **Discretionary concept**

  When the board of directors declares the amount of dividend, it is known as discretionary dividend. According to this concept, dividend payment is one of directors' decisions and so they use discretion in declaration of dividend. Corporations' charter vested powers to board of directors and it is up to their discretion that determines what and how much to pay by way of dividends to stockholders.

  "The power to declare dividends is lodged in the board of directors of the corporation. At a meeting of the board, in accordance with the charter and corporate by-laws, the board passes a resolution declaring the amount of dividend, the period which it covers, the payable date, and the record date of ownership."(*Cooke and Bimeli: 1967:180).*

  Even in the context of Nepalese corporations, the decision regarding the payment of dividend is purely vested in the board of directors of corporation, and it is also insisted by the corporate acts. There are not any legal rights to demand any part of profit in the form of dividends by the ordinary shareholders because profits are the property of the corporations and not of individual shareholders.

- **Pro-Rata Distribution Concept**

  "A dividend is a pro-rata distribution of cash, other assets, promises to pay, or additional stock to the shareholders of a corporation chargeable against its surplus accounts or (for certain liquidating dividends only) against its capital stock accounts."(*Cooke and Bimeli: 1967:180).*

The pro-rata distribution refers to proportionate share of all outstanding stock, or all shares of a given class, which participate equally in whatever is distributed. Thus, under this concept, all shareholders enjoy equal right on the profit distributed by the corporations, according to their proportion of shares.

- **Residual Concept**

"Dividend is the residue left after meeting all obligations and adjusting for retention of earnings and other provisions. It is a residue since shareholders get dividends only when there exists balance of earnings after paying fixed obligations such as operating expenses, interest, provisions for depreciation, and setting."(*Van Horne: 1993:327).*

Under this concept, dividend policy is a residual firm investment policy and dividends are paid only after financing all investment opportunities. So, dividend policy is totally passive in nature. When we treat dividend policy as strictly a financing decision, the payment of cash dividends is a passive residual.

- **Liability Concept**

Dividend once declared by the board of directors, becomes a liability of the corporation. When the board of directors of a solvent corporation declares cash dividend, the amount declared becomes an obligation to pay. If the directors avoid payment of dividend after declaration, the shareholders would have a right to take action against the directors to force payment. The dividends declared are treated as liabilities in the balance sheet if the shareholders do not come to claim in time.

2.1.4 Conflicting Theories on Dividends

Basically, there are two schools of thoughts on dividend, which have been expressed, in the theoretical literature of finance. One school, associated with Myron Gordon and John Lintner, holds the view that capital gains expected to result from earnings retention are riskier than dividend expectations. In other words, dividend yield is less risky than the expected capital gain. It also says that investors give more emphasis to the present dividend than future capital gain. Investors are not indifferent between current dividend and retention of earnings with the prospects of future dividends, capital gain and both. Accordingly, these theorists suggest that the earnings of a firm

with a low payout ratio are typically capitalized at higher rates than the earnings of a high payout firm, other things held constant.

Another school of thought, associated with Merton Miller and Franco Modigliani, holds the view that investors are basically indifferent to returns in the form of current dividends or retention of earnings with the prospects of future dividends, capital gain. When firms raise or lower the dividends, their stock prices tend to rise or fall in like manner. They argue that, given the investment decision of the firm, the value of firm is determined safely by the firms earning power and that the manner in which the earnings split between dividends and retained earnings does not affect the value of firm. In other words, when investment decision of the firm is given, dividend decision, the split of earnings between dividends and retained earnings, is of no significance in determining the value of firm.

2.1.5 Forms of Dividend

Depending upon the objectives and policies, they implement, the firm can give various type of dividend to the shareholders. Before adopting any dividend, the firm must ensure the smooth growth of the firm as well as satisfy the expectation of the shareholders. There should be consistency in dividend policy and financial plans, shareholders preference and attitude of the directors. The corporations in Nepal are in the early stage of development due to which they need to pay extensive concentration in the dividend. The empirical observation in case of public limited companies in Nepal shows that only few corporations are paying dividend to the government due to suffering from regular losses and not having risk of ownership transfer. Some of the major forms of dividends, which are adopted by corporations:

- **Cash Dividend**

  The portion of earning paid in form of cash to the investors in proportion to their share of the company is known as cash dividend. After the payment of dividend to the shareholders both the total assets and net worth of the company decreases by the amount equal to the cash dividend. For the payment of dividend, company should sustain adequate balance of cash. In case of insufficiency in cash balance for the payment of dividend, funds to be borrowed for this purpose are difficult. Thus, a company should regularly perform cash planning for maintaining a stable dividend

policy. In context of Nepal, cash dividend is the most popular form of dividend and is mostly adopted by many companies/firms/financial institutions. However it can be said that the volume of cash dividend depends on the earning of the organization, attitude of management, situation of the market, cost of external financing etc.

- **Stock Dividends/Bonus Share**

Stock dividend refers to the payment of additional stock to the shareholders. "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 the capital stock account." (*Western & Copland: 1990- 301-302)* A stock dividend represents a distribution of shares in addition to the cash dividend to the existing shareholders. This has the effect of increasing the number of outstanding shares of the company. The declarations of the bonus shares will increase to paid up shares capital and reduce the reserve and surplus of the company. The total net worth is not affected by the bonus issue. In fact, if represents nothing more than recapitalization of the owner's equity portion, i.e. the reserve and surplus. It is simply and accounting transfer from retained earnings to capital stock.

- **Scrip Divided**

A Scrip dividend is issued when company has been suffering from the cash problem and does not permit the cash dividend, but has earned profit. A dividend paid in promissory noted is called scrip divided. Scrip is a form of promissory notes promising to pay the holder at specified later date under this form of dividend, company issues and distributes transferable promissory notes to shareholders, which may be interest bearing or non interest bearing. The use of scrip dividend is desirable only when corporations have really earned profit and have only to wait for the conversion of other current assets into cash. Therefore, in order to overcome the temporary shortage of cash, sometimes company uses scrip dividends.

- **Property Dividend**

It is also known by the name of liquidating dividends. It involves a payment of assets/property in any form other than cash. Such form of dividend may be followed when ever there are assets that are no longer necessary in the operation of the business or in extra ordinary circumstances. Companies own products and the securities of subsidiaries are the example that has been paid as property dividend.

- **Optional Dividend**

  The optional dividend is, in fact, not a kind of dividend but simply a choice of dividend given to the shareholders to accept either cash or stock dividend. But the shareholders consider the comparative value of stock dividend with the amount of optional cash. "If the two are very nearly the same, as it often the case, the cash option may be a convenience to the small shareholders, who thus avoid the case and expense of selling either whole or fraction of shares he does not wish to keep."(*W.C. Waring.:1931:404).*

- **Bond Dividend**

  This type of dividend is distributed to the shareholders in the form of bond. It helps to postpone the payment of cash. In other words, company declares dividend in the form of its own bond with a view to avoid cash outflows. They are issued rarely. They are long term enough to fall beyond the current liability group. The stockholders become secured creditors if the bond carries lien on assets.

But none of these types except cash and stock dividend have been practiced in Nepalese corporations although they have ample scope for application. So for in this study, the term dividend generally refers to cash dividend.

2.1.6 Theories of Dividend

2.1.6.1 Residual Theory of Dividend

"The residual dividend policy suggests that dividend paid by the firm should be viewed as a residual amount left after all acceptable investment opportunities have been undertaken."(*Gitman: 1988: 537).*

According to this theory, dividend policy is a firm's policies in which dividend are paid only after all acceptable investments have been financed. So, payment of dividend depends on its investment policy. In other words, the firms use earnings to finance the investment opportunities having good returns. If the firm has earnings left after financing all acceptable investment opportunities these earnings would then be distributed to shareholders in the form of dividend. If not, there would be no dividends. It assumes that the internally generated funds (i.e. retained earnings) are comparatively cheaper than the funds obtained from external sources (i.e. issuing new shares). It is because the retained

earning or internally generated fund does not imply any flotation cost as in the external sources by selling equity shares.

So, under this theory, dividend policy is determined by the following two major factors:

- Company's investment opportunities.
- Availability of internally generated funds i.e., retained earnings.

According to this concept, "Dividend policy is totally passive in nature.'When we treat dividend policy as strictly a financing decision, the payment of cash dividend is a passive residual."(*Van Horne: 1993:327).*

By the analysis of residual theory, it can be concluded that the company's investment of the opportunity as well as the availability of internally generated capital determines the dividend is paid regularly, and then the dividend policy is stability.

2.1.6.2 Stability of Dividend

Stability of dividends means regularity in paying some dividend annually, even though the amount of dividend may fluctuate from year to year and may not be related with earnings.

Stability or regularity of dividends is considered as a desirable policy by the management of most companies. Shareholders also generally prefer stable dividends because all other things being the same, stable dividends may have a positive impact on the market price of the share.

By stability, we mean maintaining its position in relation to a dividend trend line, preferably one that is upward slopping. In other words, the term dividend stability refers to the consistency or lack of variability in the stream of dividends. Precisely, it means that a certain minimum amount of dividend is paid out.

Forms of Stability Dividend

Dividend can be stable in any of the following forms;

- **Constant dividend per share**

According to this form of stable dividend policy, a company follows a policy of paying a certain fixed amount per share as dividend. The fixed dividend amount would be paid year after year, irrespective of fluctuation in the earnings. In other words, fluctuations in earnings would not affect the dividend payment. In fact, when a company follows such a dividend policy it will pay dividends to the shareholders even when it suffers loss. It should be clearly noted that this policy does not imply that the dividend per share or dividend rate will never be increase. The dividend per share is increased over the years when the company reaches new levels of earnings and expects to maintain it. Of course, if the increase is expected to be temporary, the annual dividend per share is not changed and remains at the existing level.

It is easy to follow this policy when earnings are stable. If the earning pattern of a company shows wide fluctuations, it is difficult to maintain such policy. Investors who have dividends as the only source of their income prefer the constant dividend policy.

- **Constant payout ratio**

Constant / target payout ratio is a form of stable dividend policy followed by some companies. The term payout ratio refers to the ratio of dividend to earnings or the percentage share of earnings used to pay dividend. With constant / target payout ratio, a firm pays a constant percentage of net earnings as dividend to the shareholders. In other words, a stable dividend payout ratio implies that the percentage of earnings paid out each year is fixed. Accordingly, amount of dividend will fluctuate in direct proportion to earnings and are likely to be highly volatile in the wake of wide fluctuations in the earrings of the company.

This policy is related to a company's ability to pay dividends. If the company incurs loss, no dividends shall be paid regardless of the desires of shareholders. Internal financing with retained earnings is automatic when this policy is followed. At any given payout ratio the amount of dividends and the additions to retained earnings increase with increasing earnings and decrease with decreasing earnings. This policy simplifies the dividend decision, and has the advantage of protecting a company against over and under payment of dividend. It ensures that dividends are paid when profits are earned, and avoided when it incurs loss.

- **Stable rupee dividend plus extra dividend (low regular dividend plus extras)**

A policy of paying a low regular dividend plus a year-end extra amount in good years is a compromise between the previous two policies. Under this policy, a firm usually pays fixed dividend to the shareholders and in years of marked prosperity, additional or extra dividend is paid over and above the regular dividend. As normal conditions return, the firm cuts the extra dividend and pays the normal dividend per share.

It gives the firm flexibility, but it leaves investors with somewhat uncertainty about what their dividend income will be. If a firm's earnings and cash flows are quite volatile, this policy might be the best choice.

Reasons for Following Stable Dividend Policy

There are several reasons why investors prefer stable dividend.

- **Desire for current income**

The investors always have desire for current income. The investors such as retired persons and widows view dividends as the source of income so; they are ready to pay high price for their shares to avoid erratic dividend payments, which disrupt their investment.

- **Information contents**

The investors prefer stable dividend because they use dividend and change in dividend as the source of information about the firm's profitability. If the investors know that the firm will change dividends only if the management foresees a permanent earning change, then the level of dividends informs investors about management's expectations concerning the company's earnings.

- **Requirement of institutional investors**

The institutional investors such as life insurance companies, general insurance companies prefer to invest in those companies that have stable dividends. So, stable dividend policy is desirable.

2.1.7 Factors Affecting Dividend Decision

The main aspects of dividend decision are to determine the amount of earnings to be distributed to shareholders and to be retained in the enterprises. Retained earnings are

most significant internal sources of finance of growth firm. Dividends are desirable to its shareholders because it tends to increase their current wealth whereas retained earnings are desirable for the firm to exploit investment opportunities as the internal source of financing. So, in order to develop a long-term dividend policy, the directors should aim at bringing a balance between the desire of shareholders and the needs of the company. Here, an attempt has been focused to discuss the some of those factors that influence the dividend decision of enterprises.

Legal Rules

The dividend policy of the firm has to evolve with the legal framework and restrictions. Certain legal rules may limit amount of dividends that a firm may pay. First statutory restrictions may prevent a company from paying dividends while specific limitations vary by state. Legal rules constrain dividend payment on certain conditions as follows

- Capital impairment rule states that dividend should not be paid out of paid-up capital, which causes adverse effect on security of creditors and preference shareholders.
- The firm should not pay cash dividend greater than the current net profit plus accumulated balance of retained earning. Accumulated loss should be recouped out of current earnings. This rule is violated by some of Nepalese companies due to management intention and government intervention.
- Insolvent firms i.e. liabilities exceeding assets or unable to pay bills are prohibited for paying cash dividend to protect creditors of the firm.
- If the firm has retained earning to provide opportunity to shareholders for capital gain and thereby evade tax liability of income, under such condition the firm may be forced to pay dividends.

Stockholders Desire

Being the owner of the enterprises, stockholders should be considered and interested while formulating dividend policy. Stockholders who are high income tax bracket may be more interested in capital gain than dividend. Stockholders who have low-income sources are move interested in dividend than capital gain.

Liquidity Position

Profit held as retained earnings are generally invested in assists required for the conduct of the business. Retained earnings from proceeding years are already invested in plant

and equipment, inventories and other assets; they are not able to pay cash dividends because of its liquidity position. Indeed, a growing firm, even a very profitable one, typically has a pressing need for funds. In such a situation the firm may elect not too pay cash dividend.

Need to Repay Debt

When a firm has sold debt to finance expansion or to substitute for other forms of financing, it is faced with two alternatives. It can refund the debt at maturity by replacing it with another form of security, or it can make provisions for paying off the debt. If the decision is to retire the debt, this will generally require for retention of earnings.

Restriction on Loan Agreement

Restriction on loan agreement directly affects on dividend policy of a firm. Such restrictions are designed to protect the position of lender and preference shareholders. Restrictions on debt contracts may specify that dividend may be paid out of earning generated after signing the loan amount agreement and only when net working capital is above a specified amount certain amount of earning to reinvest as well.

Stability of Earning

A firm that has relatively stable earnings is often able to predict approximately what its future earnings will be. Such a firm is therefore more likely to payout a higher percentage of its earnings than is a firm with fluctuating earnings. The unstable firm is not certain that in subsequent years the hope for earnings will be realized, so it is likely to retain a high proportion of current earnings. A lower dividend will be easier to maintain if earnings fall off in the future.

Rate of Assets Expansion

The more rapid the rate at which the firm is growing, the greater is its need for financing assets expansion. The greater the future need for funds, the more likely the firm is to retain earnings rather than pay them out. If a firm seeks to raise funds externally, natural sources are the present shareholders, who already know the company. But if earnings are paid out as dividend and are subjected to high personal income tax rates, only a portion of them will be available for reinvestment.

Profit Rate

The rate of return on assets determines the relative attractiveness of paying out earnings in the form of dividends to stockholders who will use them in the current enterprise or some elsewhere.

Access the Capital Market

All firms do not have equal access to the capital market. A large well established firm with record of profitability and stability of earning has easy access to capital markets and other forms of external financing. Easy accessibility to the capital market provides flexibility to the management in paying dividend as well as in meeting the corporate obligation. Thus a fast growing firm having tight liquidity position will not face any difficulty in paying dividends if it has access to the capital market.

Control

The objective of maintaining control over the company by the existing management group or the body of shareholders can be an important variable in influencing the company's dividend policy. When a company pays large dividends, its cash position is affected. As a result, the company will have to issue new shares to raise funds to finance its investment programs. The control of the existing shareholders will be diluted if they don't want or can't buy additional shares. Under this circumstance, the payment of dividends may be withheld and earnings may be retained to finance the firm's investment opportunities.

Inflation

In an indirect way inflation costs act as a constraint on paying dividends. Our accounting system is based on historical costs. Depreciation is charged on the basis of original costs at which assets were acquired. As a result, with raising prices funds saved on account of depreciation may be inadequate to replace obsolete equipment. Those firms have to rely upon retained earnings as a source of funds to make up the shortfall. This aspect becomes more important if the assets are to be replaced in the near future. Consequently, their dividend payment tends to be low during periods of inflation.

Financial Needs of the Company

It is another consideration, which also influences on the establishment of an appropriate dividend policy. Mature companies that have few investment opportunities may generally have high payout ratios. On the other hand, growth companies may have low payout ratios. They are continuously in need of funds to finance their fast growing fixed assets. The distribution of earnings will reduce the funds of the company.

Past Dividends

A firm with record of past dividend payments strive to maintain the same in the future.

Dividends are habit forming. If the market does not receive its expected dosage, the stock price will suffer. The majority of firms surveyed indicated they would maintain their current dividend payments even if they were operating at a net loss for an interim period.

Tax of Shareholders

The tax position of the corporation's owners greatly influences the desire for dividends. For example, a corporation closely held by a few tax payers in high income tax brackets is likely to pay a relatively low dividend. The owners are interested in taking their income in the form of capital gains rather than as dividends which are subject to higher personal income tax rates. However, the stockholders of a large widely held corporation may be interested in a high dividend payout (*Friend. and Puckett: 1964-Vol. 54),*

2.1.8 Rules Regarding Dividend Practices in Nepal

There are no clear-cut legal provisions regarding dividend policy in Nepal. The responsibility to undertake required actions to protect shareholder's interest is given to Nepal Stock Exchange which is stated on the Security Exchange Act 1983. But this organization has not been so able to protect shareholders interest since interest and attitude of the board of directors play dominant role in management of public limited companies and they are generally in majority who are nominated by government.

According to Corporation Act, corporations must set aside a certain part of profit as reserves before the declaration of dividend. Moreover, corporations have to separate the tax provisions prior to dividend declaration.

Likewise, Commercial Bank Act 2031 has also made some provisions for distributing dividend. Section 18 of this act states about the restrictions for dividend distribution. According to this section, before providing the whole expenses by the bank for preliminary expenses, loss incurred in last year, capital reserve, risk beard fund reserve fund, the bank shall not declare and distribute the dividend to shareholders *(Commercial Bank Act 2031: Section 18)*

Similarly, Company Act 1997 makes some legal provisions regarding dividend distributions, which are discussed below *(Company Act 1997: Section 38)*

According to this act, board of directors can fix dividend payout rate but such rate should be proposed, first for the discussion and approval in the annual general meeting of shareholders, the general meeting can reduce the rate determined by board of directors but can't increase. Some other legal provisions for dividend payment are made by the Nepal Company Act 1997 are as follows:

- **Section (2) (m)** states that bonus shares mean shares issued in the form of additional shares to shareholders by capitalizing the surplus from the profits on the reserve fund of a company. The term also denotes an increase in the paid up values of the shares after capitalizing surplus or reserve funds.
- **Section (47)** has prohibited company from purchasing its own shares. This section states that no company shall purchase its own shares or supply loans against the security of its own shares.
- **Section (137)** bonus shares and **sub-section (1)** states that the company must inform the office before issuing bonus shares under sub-section (1); this may be done only according to a special resolution passed by the general meeting.
- **Section (140)** Dividends and sub-sections of this section are as follows:

1. Except in the following circumstances, dividend shall be distributed among the shareholders within 45 days from the date of decision to distribute them.
    a) In case any law forbids, the distribution of dividends.
    b) In case the right to dividend is disputed.
    c) In case dividends can't be distributed within the time limit mentioned above owing to circumstances beyond anyone's control and without any fault on the part of the company.
2. In case, dividends are not distributed within the time limit, mentioned in subsection (1), this shall be done by adding interest at the prescribed rate.
3. Only the person whose name stands registered in the register of existing shareholders at the time of declaring the dividend shall be entitled to it.

The above indicates that Nepalese law prohibits repurchase of stock, which is against the theory of finance. But the reason for this kind of provision is still unknown.

Similarly, followings are decisions regarding dividend payment by the government corporations dated June 14, 1998.

1) Dividend should be paid in profitable years. Even though there are cumulative losses, dividend is to be paid if cash flow is sufficient to distribute dividend.
2) In case of un-audited accounts, interim dividend should be paid on the basis of provisional financial statement.
3) Dividend rate will not be less than the interest rate on fixed deposit of commercial bank of government owned. In case of insufficiency of profit amount to distribute dividend in above mentioned rate, concerned corporation should send proposal of new distribution rate to the Finance Ministry through liaison ministry and should do what so ever decision is given there of.
4) Those corporations operating in monopoly situation should repay all amounts of profits to the government except the amount of bonus, tax and the amount needed to expand and develop the business. The amount separated for the expansion and development of business will not be more than 20 percent of profit of the year and this amount will not be more than total paid up capital. The amount so separated should all be paid as dividend if it is not used within 3 years.
5) Decision regarding distribution of annual net profit shall not be made without prior acceptance of Finance Ministry. All incentives, except those to be paid by law, shall not be distributed unless the amount of dividend is not paid to government.
6) Concerned BOD and top management will be held responsible for implementation of these dividend policies.
7) Ministry of Finance will make necessary arrangements regarding fixation of dividend percentage coordinating all concerned corporations and ministries.

2.1.9 Directives Issued by Nepal Rastra Bank for the Financial Institution.-*Directive no. 13, The Directives issued by Nepal Rastra Bank to Financial Institution, Kathmandu; 2058:47*
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To make the net profit and dividend system regular, transparent and systematic the central bank has issued this directive under Nepal Rastra Bank Act 2058 (Section 79).

1. Net profit distribution (Appropriation):

The company can distribute the net earning only for the following purpose, remaining with in the boundary of existing law.

a) To transfer into ordinary reserved capital.
b) To declare and distribute dividend.
c) To distribute bonus share.
d) To create surplus and reserve for the company.
e) To transfer into balance sheet as the retained earnings.

2. Restriction for clearing and distributing dividend:

The company cannot declare dividend unless and until the following conditions are fulfilled.

a) The company cannot pay dividend until the price of the shares in promoter's name is paid.
b) Unless the company is registered in Nepal stock exchange after the shares to the general public as mentioned in memorandum and articles of association.

[Explanation: - In this case dividend only confines to cash but also include bonus share and other profit capitalization].

3. Restriction for providing facilities:

The company cannot provide other financial facilities except dividend without the prior consent of bank and financial institution regulation division of Nepal Rastra bank.

4. The action to be taken for not following the directives for net profit and dividend:

If the company does not follow the directives, the bank can take any action mentioned in Nepal Rastra Bank Act 2058, (Section 100).

2.2 Review of related studies

2.2.1 Global Perspective

This section is devoted to review the major studies in general concerning dividend and stock prices, management view on dividend. Here presented the various studies conducted in international level by various authors and experts to review them as needed for the study.

Lintner's Study (1956), *J. lintner "Distribution of Income of Corporations Among Dividends, Retain Earnings and Taxes" The American Economic Review, Vol. 46, May 1956: 99-113.*

Joan Linter conducted a study on corporate dividend policy in the American context. He investigated a partial adjustment model as he tested the dividend patterns of 28 companies. According to John Lintner's study, dividends are 'sticky' in the sense that they are slow to change and lay behind shifts in earnings by one or more periods. According to J. Lintner, dividend is a function of earnings of that year, existing dividend rate, target payout ratio and speed of adjustment.

The followings were the basic objectives of the study.

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

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

$$DIV_t^* = P\ EPS_t \text{ ----------(1)}$$

and $$DIV_t - DIV_{t-1} = a+b\ (DIV_t^* - DIV_{t-1}) + e_t \text{ ----------(2)}$$

Adding, DIV_{t-1} on both sides of equation (2)

$$DIV_t = a+b\ DIV_t^* + (1-b)\ DIV_{t-1} + e_t \text{ ----------(3)}$$

Where,

DIV_t^* = Firm's desired payment

EPS_t = earnings

P = Targeted payout ratio

a = constant relating to dividend growth

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

The major findings of this study were as follows:

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

II. In order to modify the pattern of dividend, investment opportunities, liquidity position and funds flows are not considered.
III. Firm generally have target pay out ratios in view while determining change in dividend rate of dividend per share.

Modigliani and Miller Study (1961) *Modigliani and Miller, "Dividend Policy, Growth and The Valuation of Shares" Journal of Business, Vol. 32 No 2; 1961: 411-433.*

F. Modigliani and M. H. Miller conducted a study on the irrelevance of dividend. This is popularly known as MM approach. It is sometimes termed as Dividend Irrelevance Model.

According to MM, dividend policy of a firm is irrelevant, as it does not affect the wealth of the shareholders. They argue that the value of the firm depends on the earning power of the firm's assets or its investment policy. Thus, when the investment policy is given, the dividend decision - splitting the earnings into packages of retentions and dividends does not influence the value of equity shares. In other words, the division of earnings between dividend and retained earning is irrelevant from shareholders viewpoint.

In general, the argument supporting the irrelevance of dividend valuation is that dividend policy of the firm is a part of its financing decisions. As a part of the financing decision of the firm, the dividend policy of the firm is a residual decision and dividends are passive residual.

The MM approach of irrelevance dividend is based on the following critical assumptions:

I. The firms operate in perfect capital market where all investors are rational. Information is freely available to all. Securities are infinitely divisible and no investor is large enough to influence the market price of securities.
II. There are no flotation costs. The securities can be purchased and sold without payment of any commission or brokerage etc.
III. Taxes do not exist.
IV. The firm has a definite (fixed) investment policy, which is not subject to change.

V. Risk of uncertainty does not exist. Investors are also able to forecast future prices and dividends with certainty, and one discount rate is appropriate for all securities and all time periods. Thus r = k = kt for all time.

Gordon's Study (1962), *Gordon, "Investment Financing and Valuation of Corporation" Home Wood III, Illinois: 1962: 264-272.*

Myron J. Gordon has conducted a study on the stock valuation using the dividend capitalization approach. Gordon concludes that dividend policy does affect the value of shares even when the return on investment and required rate of return are equal. He explains that investors are not indifferent between current dividend and retention of earnings with the prospect of future dividends, capital gain and both. 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 that an increase in dividend payout ratio leads to increase in the stock price for the reason that investors consider the dividend yield (D1/Po) is less risky than the expected capital gain.

Gordon's model is also described as "a bird in hand argument". It supports the arguments, which are 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 risk less. So, rational investors as compared to deferred dividend prefer it in future. The future is uncertain. The investors would naturally like to avoid uncertainty. 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.

Basic assumptions of this model are as follows:

I. The firm uses equity capital only.
II. Internal rate of return (r) and cost of capital (ke) are constant.
III. The firm and its stream of earnings are perpetual.
IV. There are no taxes on corporate income.

V. The retention ratio (b) once decided upon is constant. Thus the growth rate, (g= br) is constant forever.

VI. K_e must be greater than g (br) to get meaningful value.

VII. The source of financing for new investment is only retained earning. No external financing is available.

Gordon's model is also known as Growth Model. Based on assumption, Gordon provided the following formula to determine the market value per share.

$$P = \frac{EPS(1-b)}{k_e - br} = \frac{DPS}{k_e - g}$$

Where,

P = Market value per share / Price of share.

EPS = Earning per share.

DPS = Dividend per share.

b = Retention ratio / percentage of retained earning.

1-b = Dividend payout ratio

K_e = Capitalization rate / Cost of capital.

br = g, or, growth rate in r, (i.e., rate of return on investment of an all equity firm).

Gordon contends that the dividend decision has a bearing on the market price of share in situations where $r > K_e$, the market price of the share is favourably affected with more retentions. The reverse holds true when $r < K_e$, i. e. more retentions lead to decline in market price. Retentions do not affect the market price of share when $r = K_e$.

Walter's Study (1966), *Walter, "Dividend Policies and Common Stock Price", Journal of Finance, Vol. 11; 1966: 29-41.*

James E. Walter conducted a study on dividend and stock prices. He proposed a model for share valuation. According to him, the dividend policy of the firm affects the value of the shares. So, the dividends are relevant. He argues that the choice of dividend policies always affect the value of enterprise.

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 assumptions of the Walter's model are as follows:

I. Firm finances all investment through retained earning. The external funds (i.e. debt, new equity) are not used for new investment.
II. All earning on the firm's investment (r) and the cost of capital (k) are constant.
III. All earnings are either distributed as dividend or reinvested internally.
IV. The values of EPS and DPS are assumed to remain constant forever in determining a given value.
V. The firm has a perpetual or infinite life.

Based on these above assumptions, Walter has given following formula of valuation of equity share.

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

Where,

P = market value of an equity share (Market price per share).

DPS = Dividend per Share.

EPS = Earning Per Share.

r = The rate of return on the firm's investment.

ke = Cost of capital / Capitalization rate

According to Walter's model, the optimum dividend policy depends on the relationship between the firm's internal rate of return (r) and its cost of capital (k). Walter referred different dividend policy for different types of the firm, which can be summarized as follows.

Growth Firm (r > k);

Growth firms are those firms, which expand rapidly. Because of ample investment opportunities yielding return (r) is higher than the opportunity cost of capital (k). So, firms 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. The market value per share (P), increases, as

payout ratio declines when r > k.

Normal Firm (r = k);

If the internal rate of return is equal to cost of capital, the dividend payout does not affect the value of share, i.e. dividends are indifferent from stock prices. In other words, there is no role of dividends on stock prices. Such a 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. The market price of share will remain constant for different dividend payout ratio from zero to 100. Thus, there is no unique optimum payout ratio for a normal firm. One dividend policy is good as other and the market value per share is not affected by the payout ratio when r = k.

Declining Firm (r < k);

If the internal rate of return (R) is less than cost of capital (k), it indicates that the shareholders can earn a higher return by investing elsewhere. In such a case for maximizing the value of shares, dividend also should be maximized. By distributing the entire earning as dividend, the value of share will be at optimum value. In other words, the market value per share of a declining firm with r < k will be maximum when it does not retain earnings at all. The relation between dividends and stock price is positive. The optimum payout ratio for a declining firm is 100 percent and the market value per share increases as payout ratio increases when r < k.

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

Criticism of Walter's Model

(i) No external financing

This model is based on assumption that the investment opportunities of the firm are financed by retained earnings finance the investment opportunities of the firm only no 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.

(ii) Constant rate of return (r) & opportunity cost of capital (k)

This model assumes that rate of return (R) and opportunity cost of capital or discount rate (k) is constant. In fact, rate of return (r) changes with increase and decrease of investment, i.e., r decreases as more investment occurs and cost of capital (k) changes directly with the risk borne by the firms.

Van Horne And MC Donald's Study (1971), *Van Horne and Mc-Donald, "Dividend Policy and New Equity Financing, Financial Management, Prentice Hall of India Pvt. Ltd., New Delhi, 1971.*

J. C. Van Horne and J. Mc-Donald conducted a 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 tests are performed with year-end 1968 cross sections for two industries, using a well-known valuation model. For there investigation, they employed two samples of firms viz. the 86 electric utilities in the continental U.S. which are included on the COMPUSTAT utility data tape; and 39 companies in the electronics and electric component industries as listed on the COMPUSTAT industrial data tape in 1968.

They tested three regression models, first two equations for the utilities industries and 3rd one equation for electronics and electronic components industries.

1st equation;

$$\frac{P_0}{E_0} = a_0 + a_1(\text{g}) + a_2\left(\frac{D_0}{E_0}\right) + a_3(\text{Lev}) + \text{u} \text{ ---------- (i)}$$

Where,

$\frac{P_0}{E_0}$ = Closing market price in 1968 dividend by average EPS for 1967 and 1968.

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

$\frac{D_0}{E_0}$ = Dividend payout measured by cash dividend in 1968 dividend by in earnings in 1968.

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

u = Error term.

2nd equation;

$$\frac{P_0}{E_0} = a_0 + a_1(\text{g}) + a_2\left(\frac{D_0}{E_0}\right) + a_3(\text{Lev}) + a_4(F_a) + a_5(F_b) + a_6(F_c) + a_7(F_d) + \text{u} \text{ ---------- (ii)}$$

Where,

F_a, F_b, F_c and F_d = Dummy variables corresponding to 'New Issue Ratio' (NIR).

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

3rd equation;

$$\frac{P_0}{E_0} = a_0 + a_1(\text{g}) + a_2\left(\frac{D_0}{E_0}\right) + a_3(\text{Lev}) + a_4(\text{OR}) + \text{u} \text{ ---------- (iii)}$$

Where,

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

By using different methodology, they compared the results obtained for firms, which both pay dividends and engage in new equity financing with other firms in an industry sample.

They concluded that for electric utility firms in 1968, share value was not adversely affected by new equity financing in the presence of cash dividends, except for those

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 forms in the electronics-electronic component industry, a significant relationship between new equity financing and value was not demonstrated.

Pandey's Study (1990), *Pandey, "Corporate Dividend Behavior", Financial Management, 5th Ed, Vikash Publishing House Pvt. Ltd., New Delhi; 1990: 783-786.*

I. M. Pandey, studied on Corporate Dividend Behavior and Analysis of dividend Policy in Practice. Case of CARSEN and TOUBRO. It has been conducted based on the data from 1976 to 1987.

A stable payout ratio results fluctuating dividend per share pattern, which could be a cause of uncertainty for investors. In practices; firms express their dividend policy either in terms of dividend per share or dividend rate. Does this mean that payout ratio is not considered important by firma while determining their dividend policies? Winter in this study conducted in context of U.S.A., found that firms generally think kin terms of proportion of earnings to be paid out. Investment requirements are not considered for modifying the pattern of dividend behavior. Thus firms generally have target payout ratios in view while determining change in dividend per share (or dividend rate). Let us assume that a firm has 'EPS', as the expected earning per share in the current year and 'p' as the payout ratio. If the firm strictly follows stable payout policy, the expected dividend per share DIV_1 is:

$$DIV_1 = p\ EPS_1 \text{ ---------- (i)}$$

And dividend change (as compared to the dividend per share of the previous year, DIV_0) will be:

$$DIV_1 - DIV_0 = p\ EPS_1 - DIV_0 \text{ ---------- (ii)}$$

But in practice, firms do not change the dividend per share (or dividend rate) immediately with change in the earning per share. Shareholders like a steadily growing

dividend per share. Thus the firm changes their dividends slowly and gradually even when there are large increases in earnings. This implies that firms have standards regarding the speed with which they attempt to move towards the full adjustment of payout of earnings. Pandey has therefore suggested the following equation to explain the change in dividends of firms in practice.

$DIV_1 - DIV_0 = b\ (p\ EPS_1 - DIV_0)$ ---------- (iii)

Where, the 'b' is the speed of adjustment. A conservative company will move slowly towards its target payout.

The implications of equation (iii) are (a) that firms stabiles their dividends in accordance with the level of current earnings and (b) that the changes in dividends over time do not correspond exactly with change in earnings in the immediate time period. In other words, dividend per share depends on the firm's current earnings (EPS_1) as well as the dividend per share of the previous year (DIV_0): the previous year's dividend per share depends on the year's earning per share and the dividend per share in the year before.

2.2.2 Nepalese Perspectives

Since very few articles and books related to dividend policy have been published in Nepal, here review some of them related to my topic, which have been presented as follows:

Pradhan's Study (1993), *R.S. Pradhan: 1993: 23-49.*

Radhe Shyam Pradhan has conducted the study on stock market behavior, collecting data of seventeen enterprises from the year 1986 to 1990 to fulfill the following objectives:

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

He has reported the following findings in connection with dividend behavior:

i. Higher the earnings on stock, larger the ratios of dividend per share to market price per share.
ii. Dividend per share and market price per share are positively correlated.

iii. Positive relationship between the ratio of dividend per share to market price per share and interest coverage.
iv. Positive relationship between dividend payout and liquidity.
v. Negative relationship between dividend payout and leverage ratio.
vi. Positive relationship between dividend payout and profitability.
vii. Positive relationship between dividend payout and turnover ratios.
viii. Positive relationship between dividend payout and interest coverage.
ix. Liquidity and leverage ratios are more variable for the stock paying lower dividends.
x. Earnings assets turnover and interest coverage are more variable for the stock paying higher dividends.

Manandhar's Study (2001), *K.D. Manandhar: 2001: 4-18.*

Kamal Das Manandhar has carried out a study based on the data collected for eleven years from 1987 to 1998. The analysis covers 35 observations pre-bonus dividend rate and 29 post-bonus dividend rates of 12 samples of the Nepalese corporate firms selected from the 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. The major findings of the research work are:

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

   In overall, corporate management have not found considering its effect on dividend distribution in future as reflected by absence of:

ii. The systematic dividend paying practices before and after bonus share issue.
iii. There is no systematic policy of dividend distribution after the issue.
iv. There is diversity in the increase in dividend rate and the total dividend payment after the issue. Which means dividend increase does not follow the bonus after issue in Nepalese corporate firm's dividend behavior.
v. The relationship between existing dividend and several of bonus share issue ratio is not found significant in Nepalese corporate firms.

Shrestha's Study (2003), *M.K. Shrestha, "Public Enterprises: Have They Dividend Paying Ability?" The Nepalese Journal of Public Administration, Vol. 16; No 2: 19-20.*

Dr. Manohar Krishna Shrestha has written and published an article in 1981, "Public Enterprises: have they dividend paying ability?" which gives short glimpse of the dividend performance of some public enterprises of that time in Nepal.

Dr. Shrestha has highlighted following issues in his articles:

- HMG Expects two things from the public enterprises:

i. They should be in a position to pay minimum dividend and

ii. The public enterprises should be self-supporting in financial matters in future years to come, but none of these two objectives are achieved by the public enterprises.

- One reason for this efficiency is caused by excessive government interference in day-to-day affairs. On the other hand, high-ranking officials of HMG appointed on directors of Board do nothing but simply shows their bureaucratic personalities. Bureaucracy has been the enemy of efficiency and Lead Corporation to face losses. Losing corporations are therefore not in position to pay dividend to government.
- Another reason is the lack of self-criticism and self-consciousness. The lack of favorable leaders is one of the biggest constraints to institution building moreover corporate leadership comes managers of corporations have not been able to identify themselves regarding what they can contribute as manager of corporations. So HMG must be in a position to drop a financial target in corporate investment by imposing financial obligation.
- The article point out irony of government biasness that government has not allowed banks to follow an independent dividend policy and HMG is focused to have pressurized on dividend payment in case of Nepal Bank Ltd, regardless of profit. But it has let off Rastriya Banijya Bank from dividend obligation in spite of considerable profit.
- Need of criteria suggested by Dr. Shrestha are:

I. Adopt a criteria-guided policy to drain resources from corporations through the medium of dividend payment.

II. Realization by managers about the cost of equity and dividend obligation.

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

I. Circulating the information to all the public enterprises about the minimum rate of dividend.

II. Proper evaluation of public enterprises in term of capability of paying dividend should be made through corporation coordination committee.

III. Imposition of fixed rate of dividend by government to financially sound public enterprises.

IV. Specifying performance criteria such as profit target in terms of emphasis, priorities, timing and plans. Developing a strategic plan, which is not just a statement of corporation aspiration but must be done to convert the aspiration into reality?

V. Identification of corporation objectives in corporation Act, company Act or special character so as to clarify the public enterprise managers regarding their financial obligation to dividend to HMG.

2.3 Review of Relevant Unpublished Thesis

In this section I comprise the some previous thesis reviews, which are mainly concerned about dividend policy, stock prices right share and bonus share of various companies.

Dhakpa gela Sherpa (2001), has conducted research on "*Corporate Information Disclosure and its Effects on Share Prices*". The primary objectives of this study were to obtain an insight on corporate information disclosure with special reference to Nepalese stock market and its listed companies.

The main objectives of the study were:

- To highlight the corporate disclosure practice in Nepal
- To identify the extent of disclosure of Nepalese listed companies measured by company characteristic namely asset size, number of share outstanding and earning margin.
- To see the relationship between corporate information disclosure and stock prices.

His research study began with the construction of disclosure index for which he collected 59 information items, classified according to their importance calculated mean value after the collection of primary data. Thereafter, he selected 33 listed companies, used their annual report and calculated disclosure scores, which was followed by use of various statistical tools like regression, correlation etc. to attain the mention objectives.

From the detail analysis, he found that most of companies do not disclose adequate and quantitative information on their annual report, and most of disclosed information consisted of only relationship between disclosure scores and variables like earning margin, asset size etc. The important finding of his research is that there is positive between market of share and disclosure score. In other words, the company having greater disclosure score had the higher price of stock.

Deepak Poudel (2005), has conducted a thesis entitled "*Stock Price Behavior of Commercial Banks in NEPSE*" with the objective to examine monthly closing price closing price of 6 commercial banks during the period of three consecutive years from 2002 to 2004. He used correlation coefficient, regression analysis, and run test and auto correlation.

The main objectives of his study were:

- To find out Nepalese peoples' awareness toward the security investment.
- To identify the stock market participation trend in Nepal.
- To study and examine the major investment influencing factors.
- To provide some useful suggestions regarding stock market participation.

He found in his study that successive price change was correlated with previous price series. He also found that most of stock did not follow random walk hypothesis. The present stock prices were depended to the historical prices. The EPS was the most affective factors for the price change of stock. Most of the investor wanted to invest in the share of commercial banks because the fluctuation in NEPSE index was due to the transaction of shares of the commercial banks. There were serious limitations in the study. Data used in this study, monthly closing price of stocks is not enough to predict the behavior of share prices.

Sarada Mainali (2006), has conducted research on "*A Study on Share Price Behavior of Listed Companies*"

The main objectives of this study were:

- To analyze the behavior of stock price of listed companies.
- To examine the stock price trend and volume of stock traded on the secondary market.
- To identify the factors affecting stock price.
- To analyze the investors' view regarding the decision on stock investment.

In her study, Mainali concluded that share trading system in share market is still uncivilized even in this IT age. Though the volume to trading has increased the number of broker has not increased. Therefore, for the systematic operation of the share market, the number of broker should be increased according to the volume of trading. Similarly, the automation system has to be put into practice to make the share market effective and competitive.

The public investor should not direct invest their saving in share haphazardly. They should at least analyze or get suggestion from expert about financial position and the level of risk prior to taking investment decision. Because of the persistence in the stock price movements' professional trader either institutional or individual can beat the market. Thus it is suggestions that the investors should be alert to exploit the opportunities.

Rudra Hari Gyawali, (2007) has conducted research on "*Right Share Practice and Its Impact on Share Price Movement*". The researcher sketches various conclusions through the research.

The main objectives of the study were:

- To explain the price movement before right offering.
- To analyze the relationship between share price movement and market movement.
- To identify the problem associated with the right practice.
- To study investors opinion regarding various aspect of right offering.

In his study he found impact of right offering on share price movement various from company to company in case of listed companies such differences are not only between the companies of different sectors but also between the companies with in the sector.

Different on share price movement before and after right offering are significant as well as in significant.

Bibek Poudel, (2008) has conducted a thesis on "*Dividend Policy and Its Impact on Share Price in Nepalese Context*". The study in concentrated with factual analysis of the prevailing practices among Nepalese commercial Bank regarding the issue of dividend policy. Beside issue of bonus share is characterized by aphorism and imperfect and under-developed capital market, the study fulfills the research gap and add inputs to financial literatures relating to this topic.

The main objectives of the study were:

- To analyze dividend policy and its impact on share price.
- To access the relationship between the dividend with earning, market price per share and net worth.
- To provide the suggestion to policy maker and execute to overcome the various issue and gap.

The study focus to evaluate the result and its impact of dividend on MPS. The study concern with joint venture banks EBL, BOK and HBL.

The feasibility of the conclusion made in this study depends upon the accuracy of secondary data. The study shows that the market price of share is consequent result of the various factors. Study aims to finding to impact of dividend policy on market price of share.

Dhundi Raj Bhattrai, (2009) has conducted a research on "*Dividend Policy and Its Effect on Stock Price, With reference to Nepalese Commercial Banks*"

The main objectives of the study were:

- To compare the various aspect of dividend policy of the selected commercial banks.
- To analyze the dividend policy and its impact on stock price changes
- To find out the relationship between the dividend with earnings, stock price and net worth.
- To provide applicable suggestion and findings.

In his study he found that the market price per share of stock is affected by the dividend related financial variables such as DPS and DPR either negatively or positively. The

changes in DPS affect the stock price differently in different banks. Beside this the stock price is largely depends upon dividend.

2.4 Research Gap

The above studies are performed by different national and international researchers. Their weakness and drawbacks are also mentioned there with. Going through research related to dividend policy of commercial banks I found most of them are either studying the dividend pattern of commercial or impact of dividend policy on stock price taking only either joint venture or only non-joint venture banks. And most of them only takes MPS, DPS, EPS and DPR as variable to analyze there research. This study will analyze the impact of dividend policy on market price of stock and price determination of common stock in secondary market in Nepal as well and I have taken both joint venture and non-joint venture banks as sample. For this I had taken EPS, DPS, DPR, MPS, DY, P/E Ratio and NWPS as variables in regards to analyze the thesis. I have analyzed relationship between all the variables. it is tried to carry out the distinct from other previous studies in terms of nature of sample firms and methodology used. The study has covered three joint venture Bank and two non-joint ventures Bank. Latest five years data have been analyzed with due consideration of EPS, DPS, MPS, DPR, DY, P/E Ratio, NWPS. In order to access the impact of dividend on market price of share, available information from concerned banks were reviewed and analyzed. Regression analysis has been done assuming market price of stock as dependent variable and other variable like DPS, EPS, DPR, and NWPS etc as independent variable. At last probable error and t-test has been done to test the significance of the data calculation. So it has been believed that this study will be earlier one.

CHAPTER – III

RESEARCH METHODOLOGY

This chapter presents the research methodology used to study dividend policy and its' impact on market price of share for this the researcher used several commercial banks and tried to find out the relationship between dividend per share and other financial indicators like, earning per share, market price per share and retained earnings. The following research methodologies are used in this chapter.

3.1. Research Design

The research design is a conceptual structure within which a research is conducted. A research design is a plan for the collection and analysis of data. It is purposeful scheme of action proposed to be carried out in a sequence during the process of research. Research design helps researcher to enable him to keep track of action and to know whether he was moving in the right direction to achieve his goal.

A research design is the specification of methods and procedures for acquiring the information needed. It is the overall operational pattern of framework, of the project stipulates what information is to be collected from which sources by what procedure. If it is a good design, it will ensure that the information obtained is relevant to the research questions and that it was collected by objective and economic procedures.

"Research Design is the plan, structure and strategy of investigation concerned so as to obtain answers to research questions and to control variances." *(Krelinger: 1983- 203)*

The research design of this research basically follows the impact of dividend policy on the market price. In other words, this research is designed so as to find out the impact on the market price of common stock of a company when dividend is paid to the shareholders and also how the market price responds when dividend is not paid to the shareholders. Various analytical and descriptive approaches are used to determine the impact of dividend policy followed by an organization on its market price.

3.2 Population and Sample

By the end of December, 2011, there were 31 commercial banks (including government owned, private and joint venture) are operating in Nepal. Due to time and resource factors, it is not possible to study all of them regarding the study topic. Therefore, sampling will be done selecting from population. Out of 31 commercial banks that are operating their activities in Nepal, only 27 are listed in Nepal Stock Exchange as on December, 2011. The researcher has selected 5 commercial banks for this study. The samples to be selected as follows:

1. Everest Bank Limited.
2. Siddhartha Bank Limited
3. Himalayan Bank Limited
4. NIC Bank Ltd.
5. Nabil Bank Ltd.

Thus for this study,

Population Size: 27

Sample Size : 5

The sample size covers about 18.52 % of the population size.

3.3 Nature and Sources of Data

The study is primarily based on secondary sources of data. The required data have been collected from financial statements of listed companies which have located at *www.nepalstock.com* and official website of related Bank.

Financial data of previous five years of the selected banks are downloaded from official website of related Bank and *www.nepalstock.com*. Different books from library, periodicals, newspaper cuttings, companies' magazines will also be used whenever required. Needless to say that this study is associated with past phenomena, therefore, only the secondary data will be used to carry out the whole calculations. Thus, the historical data from the NEPSE'S website and official website of related banks shall be used which obviously the secondary sources and past phenomena nature.

3.4 Period of the Study

The study is based on five years financial data of sample banks (i.e., Everest Bank Limited, Siddhartha Bank Limited, Himalayan Bank Limited, NIC Bank Limited and

NABIL Bank Limited) from fiscal year 2006/07 to 2010/11

3.5 Data Processing Technique

After collecting the necessary data relevant facts and figure have taken and tabulated under the different heading. Such table and formats are subjected to interpretation and explanation as necessary. Scientific calculator and computer have been used to compute data.

3.6 Method of Data Analysis

The facts and figures collected are to be systematically processed with a view to reducing them to manageable proportion; so that, the statistical treatment and meaningful interpretation can be done to formulate theory or findings. Thus, the data analysis process comprises of editing, coding, categorization & tabulation and performing statistical analysis.

The data has been analyzed according to the pattern of data available. Wide verities of methodology have been applied according to the reliability and consistency of data. Before using the analytical tools to compare result, the data containing in the financial statements have been grouped and rearranged so as to make comparison easy. For the data of five years were taken as sample from 2006/07-2010/11. The data were analyzed in ways as:

- Financially
- Statistically

The results and the findings from the two types of analysis were clearly interpreted.

3.6.1 Financial Tools

A. Dividend Per Share (DPS)

Dividend per share indicates the rupee earnings actually distributed to common stockholders per share held by them. It measures the dividend distribution to each equity shareholders.

The dividend per share simply shows the portion of earning distribution to the shareholders on per share basis. Generally, the higher dividend per share creates positive attitude of the shareholders toward the bank, which consequently helps to increase the market value of the shares. And it also works as the indicator of better performance of the bank management.

It is defined as the result received by dividing the total dividend distributed to equity shareholders by the total number of equity shares outstanding. Thus,

$$\text{DPS} = \frac{\text{Total amount of Dividend paid to ordinary shareholders}}{\text{Number of ordinary share outstanding}}$$

And, Retention Ratio = (1- Dividend Payout ratio)

= (1- DPR)

B. Earning Per Share (EPS)

Earning per share refers the rupee amount earned per share of common stock outstanding. It measures the return of each equity shareholders. It is also identified to measure the profitableness of the shareholders investment. The earning per share simply shows the profitability of the banks on a per share basis. The higher earning indicates the better achievements of the profitability of the banks by mobilizing their funds and vice versa. In other words, higher earning per share denotes the strength and lower earning per share indicates the weakness of the banks. Earning per share is computed to know the earnings capacity and to make comparison between concerned banks. This ratio can be computed by dividing the earning available to common shareholders by the total number of common stock outstanding of banks. Thus,

$$\text{EPS} = \frac{\text{Total earnings available to ordinary shareholders}}{\text{Number of ordinary share outstanding}}$$

C. Market Price Per Share (MPS)

Market price per share is the current price at which the stock is traded. Market price of common stock is the function of the current and expected future dividend of the

company and the perceived risk of the stock on the part of investors. Nepal stock exchange ltd. has been traded MPS on closing MPS. Therefore the researcher has been applied the MPS in closing MPS.

D. Price Earning Ratio

Price earning ratio is also called the earning multiplier. It is the ratio between market price per share and earning per share. In other words, this represents the amount which investors are willing to pay for each rupee of the firm's earnings.

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

E. Dividend Yield (DY)

Dividend yield is a percentage of dividends per share on market price per share. It measures the dividend in relation to market value of share. So, dividend yield is the dividend received by the investors as a percentage of market price per share in the stock market. The share with higher dividend yield is worth buying. Thus the price of higher dividend yields increase sharply in the market. This ratio is calculated by dividing dividend per share by market price of the stock. Thus,

$$\text{Dividend Yield} = \frac{\text{Dividend Per Share}}{\text{Market Price Per Share}}$$

F. Net Worth Per Share

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

$$\text{Net Worth Per Share} = \frac{\text{Net Worth}}{\text{Number of Shares}}$$

3.6.2 Statistical Tools

Different historical tools (i.e. mean, standard deviation, coefficient of variation, correlation coefficient, regression analysis, coefficient of determination, standard error of

estimation, T-statistics and) have been applied to give reasonable result to the model discussed. The tools applied here are discussed below.

A. Arithmetic Mean or Average ($\overline{X}$)

Arithmetic mean or average is the set of observation that present the entire data; its value lies some where in between the extremes. For this reason and average is frequently referred to as a measure of central tendency. It is denoted by $\overline{X}$. Symbolically,

$$\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots\ldots + X_n}{N} = \frac{\sum X}{N}$$

Where,

$\overline{X}$ = Arithmetic mean or Average

X_1, X_2, X_3, X_n = Values of variables

$\sum X$ = Sum of the values of variables

N = Total number of observation

B. Standard Deviation (δ)

The measurement of the scatter necessary of the data from mass of figure in a series able an average is known as dispersion. The standard deviation measures the absolute dispersion. If the amount of dispersion is greater than standard deviation is also greater. The small standard deviation means a high degree of uniformity of the observation well as homogeneity of a series and vice-versa. It is denoted by δ . Symbolically,

$$\delta = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$$

Where,

δ = Standard deviation

$\sum \left(X - \overline{X}\right)^2$ = Sum of the mean deviation squared

N = Total number of observation

C. Coefficient of Variation (C.V.)

The C.V. is the relative measure of dispersion, comparable across which is defined as the ratios of the standard deviation to the mean expressed percent. The series with higher coefficient of variation is said to be more variable, less consistent, less uniformity, less stable and less homogeneous. On the contrary, the series with less coefficient of variation is said to be less variable, more consistent, more uniform, more stable and more homogeneous. It is denoted by C.V. and is obtained by dividing the standard deviation by arithmetic mean. Symbolically,

$$C.V. = \frac{\delta}{\overline{X}} \times 100\ \%$$

Where,

C.V. = Coefficient of variation

δ = Standard deviation

$\overline{X}$ = Arithmetic mean or Average

D. Correlation Coefficient (r)

Correlation analysis is the statistical tools that can be used to describe the degree to which one variable is linearly related to another. The correlation coefficient measures the degree of relationship between two or more variables. It describes not only the magnitude of correlation but also its direction. The coefficient of correlation is a number, which indicates to what extent two variables are related with each other and to what extent variations in one leads to variations in the other.

The value of coefficient of correlation always lies between ± 1. A value +1 indicates a perfectly Positive relationship between the variables and a value of -1 indicates a perfect Negative relationship. A value of zero indicates that there is no relation between the variables. Thus, in this study, the degree of relationship between market price and other relevant financial indicators such as dividend per share, earning per share, dividend payout ratio etc is measured by the correlation coefficient. The correlation coefficient can be calculated as:

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

Where,

r = Correlation Coefficient (r_{12})

n = Number of Observation

[Note: - It is used for calculation of Simple Correlation Coefficient.]

The value of the correlation coefficient obtained by the above formula shall always lie between –1 and +1. When r = -1, it means, there is perfect negative relationship between the variables and when r = +1, it means, there is perfect positive relationship between the variables. However, in practice such values of r is +1, -1 and 0 are rare.

Under this study, the correlations between the following variables are analyzed:

a. Market Price per Share with all other variables.

b. Dividend Per Share with all other variables.

c. Earning Per Share with all other variables.

d. P/E Ratio with all other variables.

E. Regression Analysis

Correlation coefficient tells the relationship and direction of movement but it does not tell the relative movement in the variables under study. Regression analysis helps us to know the relative movement in the variables. Regression analysis of the following variables have been calculated and interpreted.

- **Regression analysis of MPS on EPS**

$$Y = a + bX$$

Where,

Y = Market Price per Share (MPS).

a = Regression Constant.

b = Regression Coefficient.

X = Earning per Share (EPS).

This model has been constructed to examine the relationship between market price per share (dependent variable) and earning per share (independent variable).

- **Regression analysis of MPS on DPS**

$$Y = a + bX$$

Where,

Y = Market Price per Share (MPS)

a = Regression Constant.

b = Regression Coefficient.

X = Dividend per Share (DPS).

This model has been constructed to examine the relationship between market price per share (dependent variable) and dividend per share (independent variable).

- **Regression analysis of MPS on DPR**

$$Y = a + bX$$

Where,

Y = Market Price per Share (MPS)

a = Regression Constant.

b = Regression Coefficient.

X = Dividend Payout Ratio (DPR).

This model has been constructed to examine the relationship between market price per share (dependent variable) and dividend payout ratio (independent variable).

- **Regression analysis of MPS on P/E Ratio**

$$Y = a + bX$$

Where,

Y = Market Price per Share (MPS)

a = Regression Constant.

b = Regression Coefficient.

X = Price Earning Ratio (P/E Ratio).

This model has been constructed to examine the relationship between market price per share (dependent variable) and price earning ratio (independent variable).

- **Regression analysis of MPS on DY**

$$Y = a + bX$$

Where,

Y = Market Price per Share (MPS).

a = Regression Constant.

b = Regression Coefficient.

X = Dividend Yield (DY).

This model has been constructed to examine the relationship between market price per share (dependent variable) and dividend yield (independent variable).

- **Regression analysis of DPS on EPS**

$$Y = a+bX$$

Where,

Y = DPS

a = Regression constant

b = Regression coefficient

X = EPS

This model has been applied to examine the relationship between DPS and EPS of the banks over the study period.

- **Regression analysis of DPS on Net Worth per Share**

$$Y = a + bX$$

Where,

Y = Dividend per Share (DPS).

a = Regression Constant.

b = Regression Coefficient.

X = Net Worth per Share.

This model has been constructed to examine the relationship between dividend per share (dependent variable) and net worth per share (independent variable).

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

$$\sum Y = na+bX$$

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

Where,

a and b are unknown.

n = Number of observations

F. Regression Constant (a)

The regression constant synonymous with the numerical constant which determines the distance of the fitted line directly above of below origin (i.e. Y-intercept) is said as regression constant. It is better to understand that 'a ' (constant) indicates the mean or average effect on dependent variable if all the variables omitted from the model. In other word, the value of constant is the intercept of the model, when the independent variables are zero; it indicates the average level of dependent variable. To, find out the regression

constant (a), we can use the following formula;

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

Where,

a = Regression Constant

$\overline{Y}$ = Mean or Average of Y

b = Regression Coefficient

$\overline{X}$ = Mean or Average of X

G. Regression Coefficient (b)

The regression coefficient of each independent variable (b) shows the marginal relationship between the dependent variable and those variables, holding constant effect of all other independent variables in the regression model. In other words, the coefficients explain how changes in independent variables affect the values of dependent variables estimate. It is also known that the numerical constant which determines the change in dependent variable per unit change in independent variable. To, find out the regression coefficient (b), we can use the following formula;

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

Where,

b = Regression Coefficient

n = Number of Observation

H. Coefficient of Determination (r^2)

The coefficient of determination (r^2) is a measure of degree of linear association of correlation between two variables, one being dependent variable and other being an independent variable. In other words, the coefficient of determination is the fraction of the total variation explained by the regression line. It is the ratio of explained variation to the dependent variables related to independent variables.

The coefficient of determination (r^2) ranges from 0 to 1. If r^2 is equal to 1, it means that the value of the explained variation is zero, which means that all the data points in scatter diagram exactly fall on the regression line. If the $r^2 = 0$; then there is no correlation

between the two variables.

I. Probable Error [P. E. (r)]

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

$$\text{P. E. (r)} = \quad 0.6745 \text{ X } \frac{1-r^2}{\sqrt{n}}$$

Where;

P. E. (r) = Probable error of r.

r = correlation coefficient between X and Y

- If the value of r is less than 6 times the probable error i.e. r < 6 P.E. (r). There is no significant relation between X and Y.
- If the value of r is more than 6 times the probable error i.e. r > 6 P.E. (r), there is most significant correlation between X and Y.
- If P.E. (r) < 6 P.E(r), there is moderate relation between X and Y.

J. Standard Error of Estimation (S.E.E.)

With the help of regression equations perfect practically impossible. The standard error of estimate measures the dispersion about an average line. It also measures the accuracy of the estimated figures. The smaller the value of SEE the closer will be the dots to the regression line better the estimate based on the equation for the line. If standard error of estimate is zero then there is no variation about the line and the correlation will be perfect. With the help of standard error of estimate, it is possible for us to ascertain how goes and representative the regression line is as description of the average relationship between two series. For Standard Error of Estimation (S.E.E.), we can use the following formula;

$$\text{S.E.E.} = \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$$

Where,

S.E.E. = Standard Error of Estimation

a = Regression Constant

b = Regression Coefficient

n = Number of Observation

[Note: - It is used for calculation of Simple Standard Error of Estimation (S.E.E.).]

K. T-statistics

It is used to test the validity of assumption of the study for small sample. It is very difficult to make clear-curt distinction between small samples and large samples. Generally, a sample is termed as small, if n<30 from practical point of view. For applying t-distribution, the t-values are calculated first and compared with critical values at a certain level of significance for given degree of freedom. If the computed value of (t) exceeds the table value (say to 0.05), it is known that the difference is significance at 5% level of significance but if t-values are less corresponding critical values of the t-distribution, the difference is not treated as significant. T value is calculated as follows;

T-value $|t| = \frac{b}{S_b}$

Where,

b = Regression Coefficient

S_b = Standard Error of Beta Coefficient

Note: - Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum\left(X - \overline{X}\right)^2}}$

3.7 Hypothesis

Null Hypothesis: Dividend policy has an impact on Market Price of Stock.

Alternative Hypothesis: Dividend policy has no impact on Market Price of Stock.

CHAPTER-IV

PRESENTATION AND ANALYSIS OF DATA

This chapter consists presentation and analysis of secondary data related with different variables using both financial and statistical tools explained in the third chapter. The prime objectives of this chapter are to achieve the objectives, which are set in the first chapter, the relevant data and information on dividend policy and its impact on market price of stocks are presented. In order to achieve these objectives, gathered data are presented, compared and analyzed with the help of different financial and statistical tools.

4.1 Presentation of Financial Variables

4.1.1 Analysis of EPS of sample banks

The earning per share (EPS) of the banks under study is tabulated as follows:

Table 4.1

Comparative Earnings Per Share of banks under study (in Rs.)

YEAR	EBL	SBL	HBL	NIC	NABIL
2006/07	62.78	13.05	59.24	16.1	129.21
2007/08	78.42	15.88	60.66	24.01	137.08
2008/09	91.82	17.29	62.74	25.75	109.31
2009/10	99.99	22.89	61.9	27.83	106.76
2010/11	100.2	21.99	31.8	34.3	78.61
MEAN	**86.63**	**18.22**	**55.27**	**25.6**	**112.19**
S.D.(δ)	**14.32**	**3.72**	**11.79**	**5.89**	**20.37**
C.V.	**0.17**	**0.2**	**0.21**	**0.23**	**0.18**

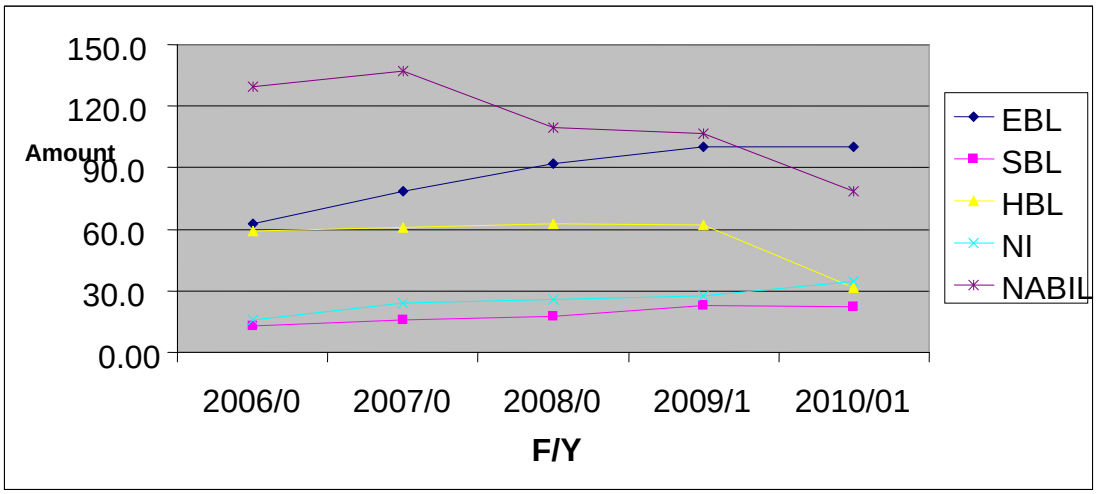
Source: Annual Reports of Selected Banks

Appendix - I

The EPS of banks under study are presented in graphical form as below:

Figure 4.1

Comparative EPS of sample banks



The EPS of NABIL Bank ranges between Rs. 137.08 to Rs. 78.61 during the period of study. During this period, the average EPS of NABIL Bank is Rs. 112.19 & the standard deviation (S.D.) & coefficient of variation (C.V.) of EPS of NABIL under the study period are 20.37 and 18%. C.V. of EPS 18% indicates that there is a moderate level of fluctuation in the EPS of NABIL during the study period.

The EPS of EBL ranges between Rs 62.78 to Rs 100.16. During the study period, the average EPS of EBL is Rs 86.63. Ranges of EPS of EBL during the study period shows that the EPS of EBL is in increasing trend & at the same time 17% C.V. shows that there is low level of fluctuation in EPS of EBL among the sample Banks.

The average EPS of HBL is Rs. 55.27 & during the study period ups and down trend of EPS indicates that the earning of HBL is volatile & 21% of C.V. shows that there is high level of fluctuation in EPS of HBL.

The average EPS of SBL is Rs. 18.22. S.D. & C.V. of EPS of SBL are 3.72 & 20% respectively. The 20% C.V. shows that there is high level of fluctuation in EPS of SBL.
The EPS of NIC ranges between Rs.16.10 to Rs.34.30 During the study period, the average EPS of NIC is Rs 25.60. Ranges of EPS of NIC during the study period shows that the EPS of NIC is in increasing trend & at the same time 23% C.V. shows that there is high level of fluctuation in EPS of NIC among the sample Banks.

From the above analysis, it can be seen that the average EPS of NABIL is highest & SBL has the lowest under the study period. NIC bank has the highest C.V. among other sample banks and the lowest average EPS has been seen in SBL. It can be seen that, EBL and NABIL have the most consistent EPS among all sample Banks. And C.V. of EPS of NIC shows that, there is highest fluctuation in EPS.

4.1.2 Analysis DPS of sample Banks

Dividend per share of sample banks under study is tabulated as follows:

Table 4.2

Comparative DPS of banks under study (In Rs.)

YEAR	EBL	SBL	HBL	NIC	NABIL
2006/07	25	0	35	10.53	85
2007/08	40	15.79	40	21.05	140
2008/09	50	15.79	45	21.05	100
2009/10	60	10.53	43.56	15.79	85
2010/11	60	8.42	36.84	26.32	70
MEAN	**47**	**10.11**	**40.08**	**18.95**	**96**
S.D.(δ)	**13.27**	**5.83**	**3.81**	**5.37**	**23.96**
C.V.(%)	**0.28**	**0.58**	**0.1**	**0.28**	**0.25**

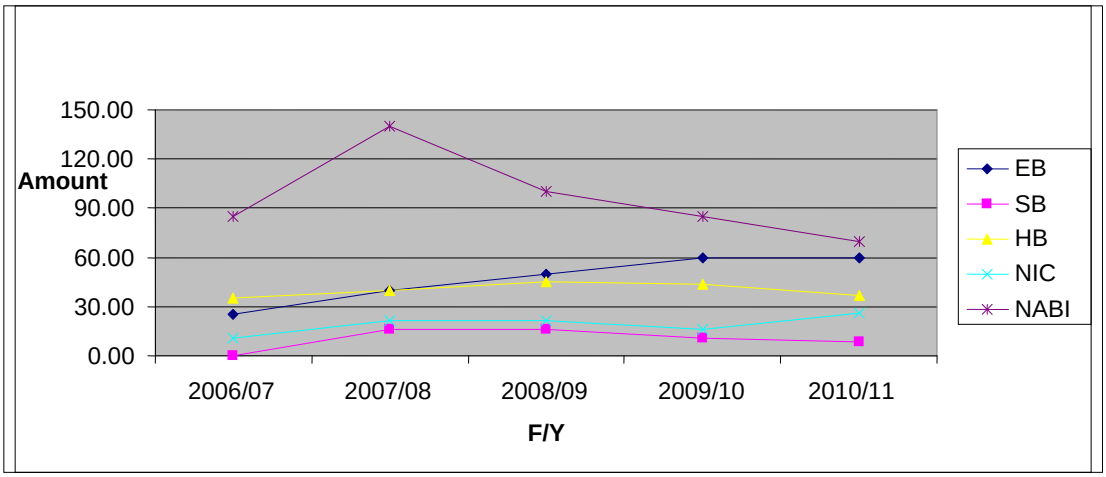
Source: Annual Reports of Selected Banks

Appendix- II

DPS of Banks under study are presented in graphical form as below:

Figure 4.2

Comparative DPS of sample banks



The average DPS of NABIL Bank is Rs. 96 and the S.D. and C.V. are 23.96 and 25% respectively. The highest and lowest DPS during study period are Rs. 140 ad Rs. 70 respectively. C.V. 25% shows that there is some inconsistency in dividend payment, during study period.

Average DPS, S.D. and C.V. of NIC Bank during the study period are Rs. 18.95, 5.37 and 28% respectively. And highest and lowest DPS of NIC bank during study period are Rs.26.32 and Rs.10.53 respectively. 28% C.V. of NIC Bank implies that dividend distribution pattern of NIC Bank is moderate level of fluctuation during the study period among the sample Banks.

HBL has the average DPS of Rs.40.08, S.D. is 3.81 with C.V. of 10%. Highest and lowest dividends during the study period are Rs.45 and Rs.35 respectively. 10% C.V. of HBL indicates that, there is high consistency in the field of dividend distribution during the study period among the sample Banks.

Even though SBL has earned profit in F/Y 2006/07, SBL did not distributed dividend to the stockholders. But SBL paid dividend in other subsequent year during the study period. So, the average DPS of SBL is Rs.10.11. And S.D. & C.V. are 5.83 and 58% respectively. 58% of C.V. shows that, there is high degree of inconsistency in distribution of dividend during the study period among the sample Banks.

Average DPS, S.D. and C.V. of EBL are Rs.47, 13.27 and 28% respectively. 28% C.V.

shows that there is quite inconsistency in the field of dividend distribution. Even though, the dividend distribution pattern of EBL is in increasing trend during the study period among the sample Banks.

From the above analysis, it can be said that, NABIL has highest average DPS i.e. Rs.96, where as SBL has lowest average DPS i.e. Rs.10.11 among the sample Banks during the study period. C.V. of HBL shows that, there is highest consistency in the field of dividend distribution among sample Banks, during study period. Where as the DPS of other banks are highly fluctuated during the study period. In the table, it can be seen that EBL has increasing trend in dividend distribution.

4.1.3 Analysis Dividend Payout Ratio (DPR) of sample banks

DPR of sample banks are presented as follows:

Table 4.3

Comparative DPR of sample banks under study (In %)

YEAR	EBL	SBL	HBL	NIC	NABIL
2006/07	39.82	0	59.08	65.4	65.78
2007/08	51.01	99.43	65.94	54.32	102.13
2008/09	54.45	88.21	71.72	47.31	91.48
2009/10	60.01	46	70.37	35.81	79.62
2010/11	59.9	38.29	115.85	76.73	89.05
MEAN	**53.04**	**54.39**	**76.59**	**55.92**	**85.61**
S.D.(δ)	**7.44**	**35.95**	**20.12**	**14.17**	**12.23**
C.V.(%)	**14.02**	**66.09**	**26.27**	**25.34**	**14.29**

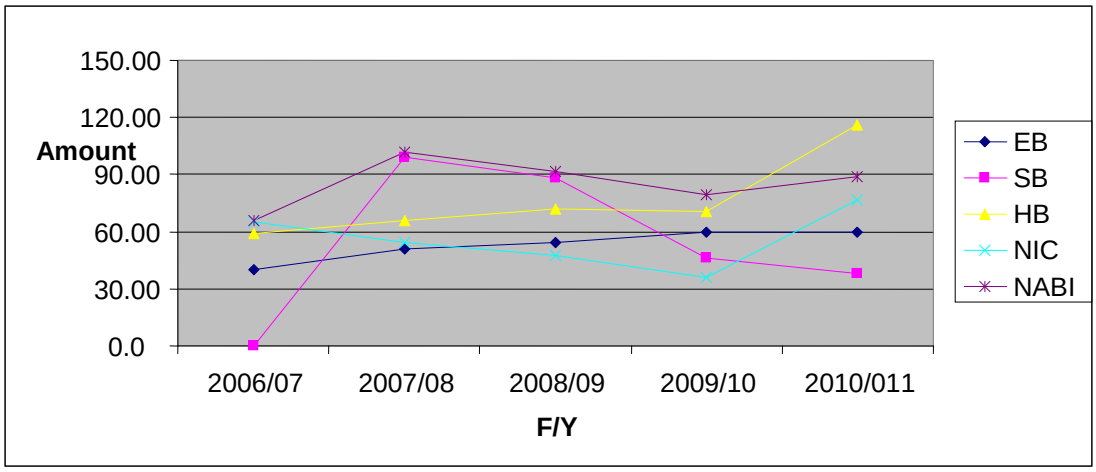
Source: Annual Reports of Selected Banks

Appendix - III

Graphical presentation of DPR of sample banks is as below:

Figure 4.3

Comparative DPR of sample banks under study



NABIL Bank has an average DPR of 85.61%. This indicates that NABIL Bank pays 85.61% dividend out of its total earnings as dividend to its shareholders. S.D. and C.V. of DPR of NABIL are 12.23 and 14.29% respectively. This indicates that, there is low level of variation in DPR of NABIL among the sample Banks during the study period.

Average DPR of EBL is 53.04% during the study period. It shows that, EBL pays 53.04% of its total earning on average as dividend to its shareholders. The S.D. and C.V. of DPR of EBL are 7.44 times and 14.02% respectively, which shows that, there is low level of variation in dividend payout ratio.

SBL has average DPR of 54.39%. This indicates that SBL pays 54.39% of its earning as dividend to its shareholders. The S.D. and C.V. are 35.95 and 66.09% which indicates that the DPR of SBL is highly inconsistent during the study period.

Average DPR of HBL is 76.59%. This shows that, HBL pays 76.59% of its earning as dividend to its shareholders. S.D. of DPR of HBL is 20.12 times and the C.V. is 26.27%. The C.V. of 26.27% indicates that DPR of HBL is moderate level of consistent during the study period.

NIC Bank has average DPR of 55.92%. S.D. and C.V. of DPR of NIC are 14.17 times and 25.34% respectively. This indicates that, there is moderate level of fluctuation in DPR of NIC among the sample Banks during the study period.

The above analysis shows that, NABIL Bank has high average DPR among the sample

banks during the study period. Where as the EBL Bank has lowest C.V. among the sample Banks during the study period. It indicates that, NABIL Bank is a strong dividend paying Bank among the sample Banks. NABIL Bank is paying 85.61% of its total earning as dividend to its stockholders in average. Whereas, EBL is highly consistent in paying dividend among sample Banks, only 14.02% variation in its paying pattern during the study period.

4.1.4 Analysis of Market Price of Stock (MPS) of sample banks

MPS is the market prices of stock, which determined by market and actually stocks are traded in the secondary market on the basis of this prices. MPS is listed and treated on secondary market of stock. The closing MPS of sample banks under the study period is presented as below:

Table 4.4

Comparative MPS of sample banks under study (in Rs.)

YEAR	EBL	SBL	HBL	NIC	NABIL
2006/07	1379	360	1100	496	2240
2007/08	2430	778	1740	950	5050
2008/09	3132	1090	1980	1284	5275

2009/10	2455	1000	1760	1126	4899
2010/11	1630	444	816	626	2384
MEAN	**2205**	**734.2**	**1479.2**	**896.4**	**3970**
S.D.(δ)	**630.1**	**291**	**443.01**	**296.4**	**1359**
C.V.(%)	**28.57**	**39.62**	**29.95**	**33.07**	**34.25**

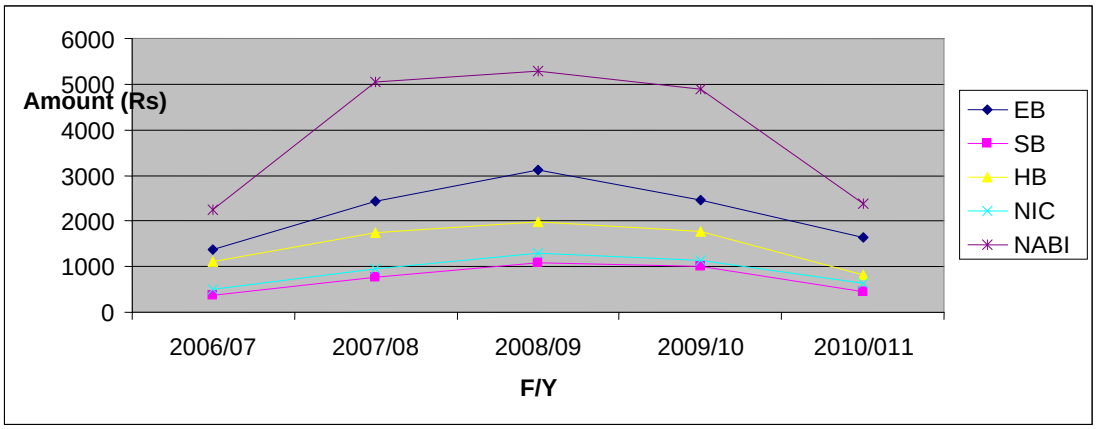
Source: Annual Reports of Selected Banks

Appendix - IV

Graphical presentation of comparative MPS of sample banks are as below:

Figure 4.4

Comparative MPS of sample banks under study



The closing MPS of EBL ranges between Rs.1379 to Rs.3132 during the study period. The average closing MPS of EBL during the study period is Rs. 2205.20, S.D. and C.V. of closing MPS of EBL are 638.14 and 28.57% respectively, which indicates that, there is high level of consistency in MPS of EBL among the sample Banks during the study period.

Average closing MPS of SBL is Rs.734.20. S.D. and C.V. of MPS of SBL are Rs.291 and 39.62%. It indicates that, MPS of SBL is highly fluctuated during the study period.

During the study period, closing MPS of HBL ranges between Rs.816 to Rs.1980. The average closing MPS of HBL has Rs.1479.20, while S.D. and C.V. are 443.01 and 29.95%, this indicates that, the MPS of HBL is in moderate level of fluctuation.

The average closing MPS of NIC is Rs.896.40 during the study period. S.D. and C.V. are 296.40 and 33.07%, this indicates that, MPS of NIC has fluctuated quite a lot among the sample Banks during the study period.

Closing MPS of NABIL ranges between Rs.2240 to Rs.5257 during the study period. Average closing MPS is Rs.3969.60, S.D. and C.V. are 1359.47 and 34.25% respectively, it shows that, the MPS of NABIL has also fluctuated quite a lot during the study period.

From the above analysis, it can conclude that, the closing MPS of NABIL Bank is highest as compare to other sample Banks during the study period. On the other hand, S.D. of NABIL Bank is also highest as compare to other sample Banks. Similarly, the C.V. of SBL is highest among the sample Banks during the study period.

4.1.5 Analysis of Price Earning (P/E) Ratio

Price earning (P/E) ratio of sample banks under study are presented as follows:

Table 4.5
Comparative P/E Ratio of sample banks under study

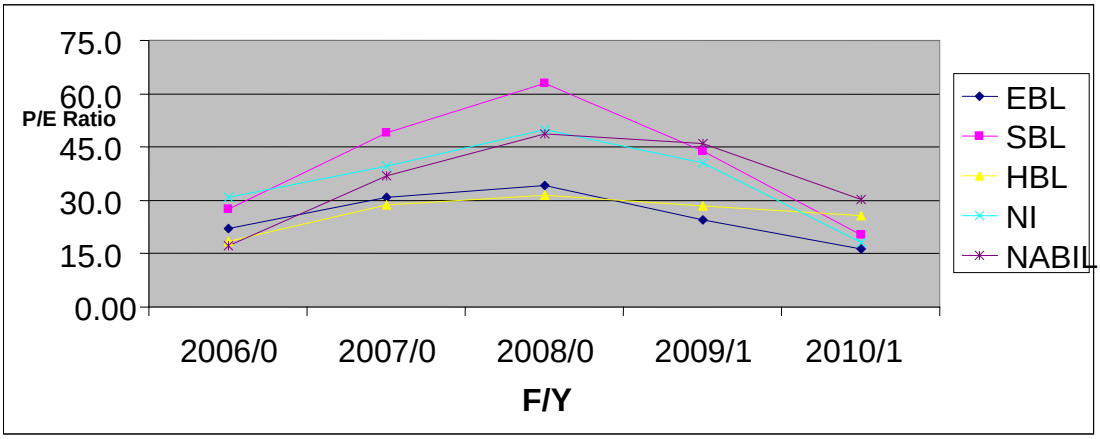
YEAR	EBL	SBL	HBL	NIC	NABIL
2006/07	21.97	27.59	18.57	30.81	17.34
2007/08	30.99	48.98	28.69	39.56	36.84
2008/09	34.11	63.04	31.56	49.86	48.7
2009/10	24.55	43.7	28.43	40.46	45.89
2010/11	16.27	20.19	25.66	18.25	30.33
MEAN	**25.58**	**40.7**	**26.58**	**35.79**	**35.82**
S.D.(δ)	**6.37**	**15.29**	**4.42**	**10.64**	**11.31**
C.V.(%)	**24.9**	**37.57**	**16.63**	**29.74**	**31.58**

Source: Annual Reports of Selected Banks

Appendix - V

Graphical presentations of P/E Ratio of sample banks are as below:

Figure 4.5
Comparative P/E Ratio of sample banks



The average P/E Ratio of EBL is 25.58 during the study period. It is with in the range of 16.27 to 34.11. The S.D. of P/E Ratio is 6.37, where as C.V. is 24.90% this means, the Bank has moderate level fluctuation in P/E ratio during the study period.

SBL has average P/E Ratio of 40.70; S.D. and C.V. are 15.29 and 37.57 respectively. This indicates that SBL has high degree of inconsistency in P/E Ratio among the sample Banks during the study period.

The average P/E Ratio of HBL has 26.58; this is with in the range 18.57 to 31.56. S.D. and C.V. are 4.42 and 16.63%; this indicates that there is high degree of consistency in P/E Ratio of HBL among the sample Banks during the study period.

The NIC Bank has an average P/E Ratio of 35.79 with S.D. is 10.64 and C.V. is 29.74%, this means the Bank has moderate level of fluctuation in P/E Ratio among the sample Banks during the study period.

The average P/E Ratio of NABIL Bank is 35.82; it is with in the range of 17.34 to 48.70. S.D. of P/E Ratio of the Bank is 11.31 with C.V. of 31.58% this indicates that the Bank has high degree of inconsistency in P/E Ratio during the study period.

From the above analysis, SBL has the highest average P/E Ratio where as EBL has the lowest average P/E Ratio among the sample banks during the study. HBL has the highest consistency in the P/E Ratio on the other hand SBL has high degree of inconsistency in

P/E Ratio among the sample Banks during the study period.

4.1.6 Analysis of Dividend Yield (DY) of sample banks

Tabulation of DY of sample banks is as below:

Table 4.6

Comparative DY of sample banks

YEAR	EBL	SBL	HBL	NIC	NABIL
2006/07	1.81	0.00	3.18	2.12	3.79
2007/08	1.65	2.02	2.30	2.21	2.77
2008/09	1.60	1.45	2.27	1.64	1.90
2009/10	2.44	1.05	2.48	1.40	1.74
2010/11	3.68	1.89	4.51	4.20	2.95
MEAN	**2.24**	**1.28**	**2.95**	**2.31**	**2.63**
S.D.(δ)	**0.78**	**0.73**	**0.85**	**0.99**	**0.75**
C.V.(%)	**34.96**	**56.68**	**28.75**	**42.76**	**28.42**

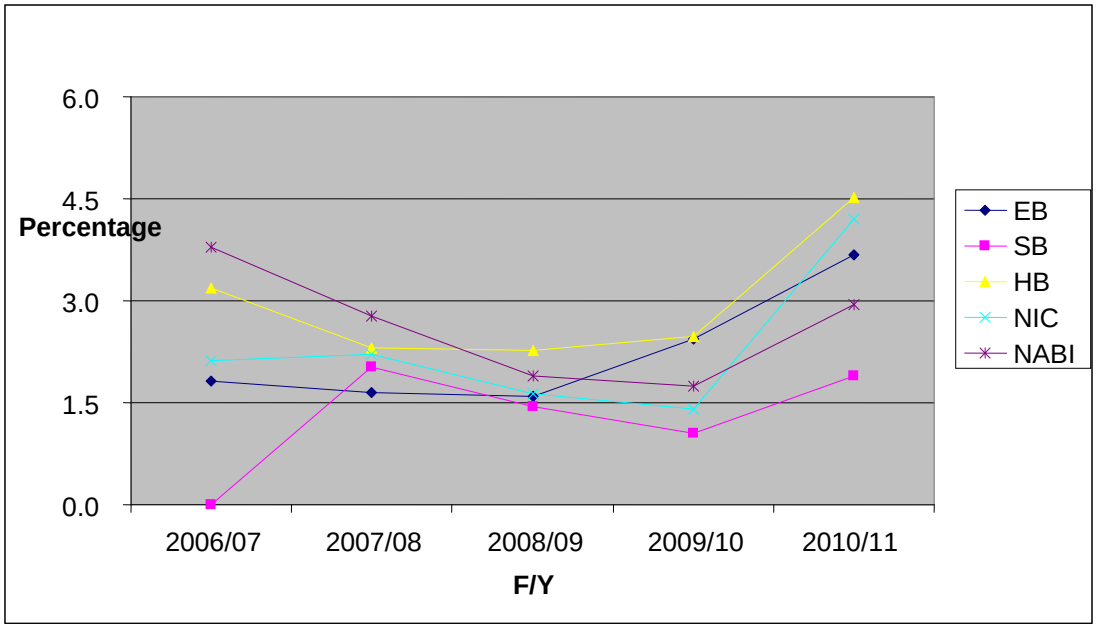
Source: Annual Reports of Selected Banks

Appendix - VI

Graphical presentations of DY of sample banks are as below

Figure 4.6

Comparative DY of sample banks



The DY of EBL ranges of 1.60% to 3.68% during the study period. During this period, the average DY of EBL is 2.24%. The S.D. of DY is 0.78 and its C.V. is 34.96%. This

indicates that there is moderate level fluctuation in DY as compared to other sample banks during the study period.

Similarly, the average DY of SBL is 1.28% with S.D. of 0.73. The DY of SBL ranges of 0% to 2.02% during the study period. C.V. of DY of SBL is 56.68%, this indicates that, there is high degree of inconsistency in DY of SBL among the sample Banks during the study period.

The average DY of HBL is 2.95% during the study period and its' S.D. is 0.85. C.V. of DY of HBL is 28.75% during the study period. This indicates that, there is lower level of fluctuation in DY of HBL during the study period.

DY of NIC Bank ranges of 1.40% to 4.20% during the study period and its' average DY is 2.31% with S.D. of 0.99 and C.V. of DY is 42.76%, which is second highest as compared to other sample banks during the study period.

Average DY of NABIL Bank is 2.63% and which is ranges of 1.74% to 3.79%. S.D. of DY of NABIL is 0.75 and C.V. is 28.42%. This indicates that there is high degree of consistency in DY of NABIL Bank among the sample Banks during the study period.

From the above analysis, it is known that, HBL has highest average DY as compared to other sample Banks and DY of HBL in F/Y 2010/11 is 4.51% which is highest among the sample banks during the study period. Similarly, C.V. of SBL Bank shows a highly inconsistent in DY as compared to other sample Banks during the study period. NABIL Bank has high degree of consistency in DY among the sample banks during the study period.

4.1.7 Analysis of Net Worth Per Share (NWPS) of sample banks

NWPS of sample banks under study are stated as below:

Table 4.7

Comparative NWPS of sample banks under study (In Rs.)

YEAR	EBL	SBL	HBL	NIC	NABIL
2006/07	217.67	120.63	228.72	116.13	381.00
2007/08	280.82	132.28	264.74	139.17	418.00
2008/09	321.77	130.39	247.95	138.09	354.00
2009/10	345.23	134.29	256.52	145.58	324.00
2010/11	331.99	146.44	226.79	134.57	265.00
MEAN	**299.50**	**132.81**	**244.94**	**134.71**	**348.40**
S.D.(δ)	**46.23**	**8.28**	**15.02**	**9.95**	**51.94**
C.V.(%)	**15.44**	**6.23**	**6.13**	**7.38**	**14.91**

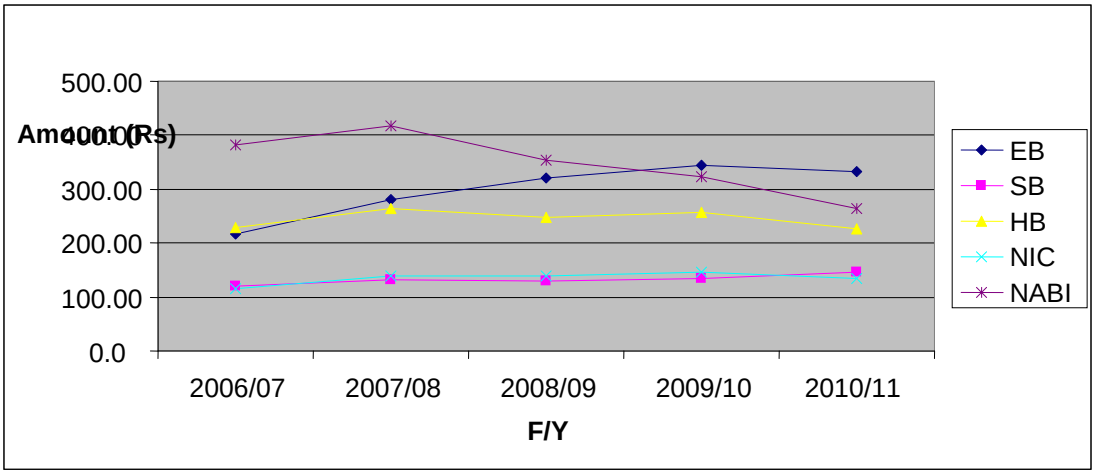
Source: Annual Reports of Selected Banks

Appendix - VII

Graphical presentation of NWPS of sample banks is as under:

Figure 4.7

Comparative NWPS of sample banks



NWPS of EBL ranges between Rs.217.67 to 35.23 during the study period with an average NWPS of Rs.299.50. The S.D. and C.V. of NWPS of EBL during the study period are 46.23 and 15.44% respectively. As compared to other sample banks, the C.V. of NWPS of EBL indicates that, there is high degree of inconsistency in NWPS of EBL

during the study period.

The average NWPS of SBL during the study period is Rs.132.81 and its NWPS ranges between Rs.120.63 to Rs.146.44 during the study period with S.D. of 8.28. 6.23% C.V. shows that there is less variability in NWPS of SBL during the study period and it is the second lowest C.V. among the sample banks.

The NWPS of HBL ranges between Rs.226.79 to Rs.264.74 with the average NWPS of Rs.244.94. The S.D. and C.V. of NWPS of HBL are 15.02 and 6.13%. 5.09% of C.V. of NWPS of HBL shows that there is more consistency in NWPS of HBL during the study period as compared to other sample banks. C.V. of HBL is lowest then other sample banks; it is highly consistency than other sample banks during the study period.

The average NWPS of NIC Bank is Rs.134.71 with S.D. of 9.95 during the study period. 7.38% of C.V. of NIC shows that there is moderate level of variability in NWPS of NIC during the study period.

Among all sample banks, NWPS of NABIL is higher than other sample banks in every F/Y during the study period. It is ranges between Rs.265 to Rs.418. Rs.418 NWPS of NABIL are highest NWPS among the sample banks during the study period. The average NWPS of NABIL has Rs.348.40 with S.D. 51.94. and C.V. 4.91% of NABIL shows that there is quite high level of fluctuation in NWPS during the study period.

Above analysis shows that NABIL has the highest average NWPS where as HBL has the lowest C.V. of NWPS during the study period. NWPS of all banks ranges between Rs.116.13 to Rs.418 during the study period. C.V. of NWPS of all banks shows that there is moderate level of fluctuation in NWPS during the study period. Eventhough the C.V. of EBL Bank has highest as compared to other sample banks. It is seen that, there is high degree of fluctuation in NWPS of EBL as compared to other sample banks during the study period.

4.2 Statistical Analysis

4.2.1 Correlation Analysis

The correlation analysis is generally used to describe the degree to which one variable is related to another variable. It helps to determine whether a positive or negative

relationship exists. The positive correlation indicates that increase in value of one variable leads to increase in value of other variable and the negative correlation indicates that increase in value of one variable leads to decrease in value of other variable, means opposite direction between two variables. The correlation coefficient lies between +1 to -1, +1 correlation coefficient indicates that the variables are perfectly positively correlated and -1 coefficient indicates that the variables are perfectly negatively correlated. And if the correlation coefficient is 0, it means the variables are not related to each other. The number indicates the degree of correlation between the variables. For the first and second objective of the study, the relationship between the dividends with earnings, market price of share and net worth and impact of divided policy presented with the help of Correlation Coefficient and Regression Analysis.

4.2.1.1 Correlation coefficient between financial variables of EBL

Correlation coefficient of between different variable of EBL are presented in table as below:

Table 4.8

Correlation coefficient between financial variables of EBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.36	0.40	0.41	0.86	-0.47	0.53
DPS	1.00	1.00	0.99	-0.16	0.64	0.98
EPS	-	1.00	0.99	-0.12	0.61	0.99
P/E	-	-	-0.09	1.00	-0.83	0.02

Source: ***Appendix – VIII***

Table 4.9

Values of $PE(r) \times 6$ of EBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	1.57	1.51	1.51	0.48	0.55	1.30
DPS	-	0.01	0.03	1.76	1.08	0.06
EPS	-	-	0.05	1.78	1.14	0.04
P/E	-	-	1.79	-	0.55	1.81

Source: ***Appendix –VIII***

The above table depicts that MPS of EBL has negatively correlated with DY; it is because of high degree of changes in MPS due to small level of changes in DPS. Here, with the payment of dividend, the MPS has been increasing with high degree of fluctuation. In the same way MPS of EBL is positively correlated with DPS, EPS, DPR, P/E Ratio and NWPS. It depicts that there is positive relation of MPS with other factors, that is, increase in EPS, DPS, P/E Ratio and NWPS increases the MPS.

The table of value of $PE(r) \times 6$ of EBL shows that only the statistical value of correlation coefficient between MPS on P/E Ratio, DPS on DPR, NWPS and EPS, EPS on DPR and NWPS, p/e ration on DPR and DY are significance and other are insignificance.

4.2.1.2 Correlation between financial variables of SBL.

Correlation coefficients between financial variables of SBL are tabulated as under:

Table 4.10

Correlation coefficients between financial variables of SBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.78	0.30	0.70	0.90	0.32	0.01
DPS	1.00	0.27	0.98	0.77	0.80	0.35
EPS	-	1.00	0.07	-0.13	0.44	0.81
P/E	-	-	0.78	1.00	0.24	-0.27

Source: ***Appendix – IX***

Table 4.11

Values of $PE(r) \times 6$ **of SBL**

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.69	1.64	0.91	0.35	1.63	1.81
DPS	-	1.67	0.09	0.74	0.64	1.59
EPS	-	-	1.80	1.78	1.46	0.62
P/E	-	-	0.70	-	1.70	1.67

Source: Appendix – IX

The above table depicts that, MPS of SBL has positively correlated with other financial variables. It indicates that, there is positive relation between MPS and other variables i.e. increase in other financial variable leads to increase in MPS of SBL. The correlation of EPS with P/E Ratio and NWPS are negatively correlated, it is may be due no dividend payment made in the first F/Y during the study period.

The table value of $PE(r) \times 6$ of SBL shows that only the correlation coefficient of MPS and DPS, MPS and P/E Ratio, DPS and DPR, DPS and P/E Ratio, DPS and DY, EPS and NWPS, P/E Ratio and DPR are statistically significance.

4.2.1.3 Correlation coefficient between financial variables of HBL

Correlation coefficient of between different financial variable of HBL are presented in table as below:

Table 4.12

Correlation coefficient between financial variables of HBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.89	0.81	-0.59	0.74	-0.29	0.85
DPS		0.51	-0.22	0.88	0.01	0.68
EPS			-0.95	0.19	-0.33	0.64
P/E			0.10	1.00	-0.10	0.68

Source: Appendix –X

Table 4.13

Values of $PE(r) \times 6$ of HBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.38	0.63	1.17	0.83	1.66	0.52
DPS		1.33	1.72	0.40	1.81	0.97
EPS			0.18	1.74	1.61	1.06
P/E			1.79	0.00	1.79	0.98

Source: Appendix – X

In the above table we can seen that, MPS of HBL is positively correlated with its' DPS, EPS, P/E Ratio and NWPS. It indicates that, there positive relation of MPS with DPS, EPS, P/E Ratio and NWPS, it means increase in DPS of HBL leads to increase the MPS of HBL. In the same way increase in EPS, DPR, P/E Ratio and NWPS also leads to increase the MPS. But the relation between MPS and DY, MPS and DPR is negatively correlated it is just because of small percentage increase in DPS leads to greater percentage change (increase) in MPS of HBL. And it implies that increase in MPS leads to decrease in DY. On the other hand, relationships of DPS with other variable except DY and DPR are positively correlated. This means increase in EPS, P/E Ratio and NWPS leads to increase the DPS of HBL. But negative correlation of DPS with DY and DPR shows that there is negatively relationship between DPS and DY, it implies that increase in DPS leads to decrease in DY it is just because of small percentage increase in DPS leads to greater percentage increase in MPS. There is positive relationship of EPS with other variable except with DY and DPR. The reason to be negative correlation of EPS with DPR and DY is that, increase in EPS cause to increase the DPS and in the same way increase in DPS leads to increase MPS, but the percentage of increase in DPS

and MPS are different, means small percentage increase in DPS leads to higher percentage increase in MPS which leads to decrease the DY, therefore, there is inverse relation of EPS with DPR and DY. There is positive relation between MPS and EPS that's why, increase in EPS leads to increase MPS and P/E ratio but there is negative relationship between DPS with DY, small percentage increase in DPS leads to higher percentage increase in MPS which effects to decrease the DY, that's why there is negative correlated between P/E Ratio and DY.

The table of value of $PE(r) \times 6$ of HBL shows that only the correlation coefficient of MPS with EPS, DPS and NWPS, DPS and P/E Ratio, are statistically significance.

4.2.1.4 Correlation coefficient between financial variables of NIC

Correlation coefficient between different financial variable of NIC Bank are presented in table as below:

Table 4.14

Correlation coefficient between financial variables of NIC

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.20	0.22	-0.83	0.83	-0.62	0.80
DPS	-	0.85	0.30	0.61	0.63	0.52
EPS	-	-	0.11	0.53	0.56	0.66
P/E	-	-	-0.40	1.00	-0.15	0.71

Source: Appendix –X I

Table 4.15

Values of $PE(r) \times 6$ of NIC

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	1.74	1.72	0.56	0.55	1.11	0.66
DPS	-	0.51	1.64	1.13	1.08	1.32
EPS	-	-	1.78	1.30	1.24	1.03
P/E	-	-	1.52	-	1.77	0.89

Source: Appendix –X I

In the table we can seen that MPS of NIC Bank is positively correlated with DPS, EPS, P/E Ratio and NWPS. MPS is negatively correlated with DPR and DY, it is because of higher percentage change (increase) in EPS leads to lower percentage change (increase) in DPS and lower percentage increase in DPS leads to greater percentage increase in MPS. The relationship between MPS on P/E Ratio and NWPS are positively correlated, i.e. increase in P/E Ratio and NWPS leads to increase in MPS. The relationship between DPS with other variable are positively correlated. Similarly, the relationship between EPS with other variable are positively correlated. The relationship of P/E Ratio with DPR and DY are negatively correlated.

The table of value of $PE(r) \times 6$ of NIC shows that, only the correlation coefficient of MPS with DPR, P/E Ratio and NWPS are statistically significance.

4.2.1.5 Correlation coefficient between financial variables of NABIL

Correlation coefficient between different financial variable of NABIL Bank are

presented in table as below:

Table 4.16

Correlation coefficient between financial variables of NABIL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.63	0.29	0.59	0.88	-0.81	0.38
DPS	-	0.75	0.64	0.24	-0.09	0.83
EPS	-	-	-0.03	-0.18	0.27	0.98
P/E	-	-	0.55	1.00	-0.98	-0.08

Source: Appendix –X II

Table 4.17

Values of $PE(r) \times 6$ of NABIL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	1.09	1.65	1.19	0.40	0.61	1.54
DPS	-	0.80	1.06	1.70	1.79	0.56
EPS	-	-	1.81	1.75	1.68	0.07
P/E	-	-	1.26	-	0.07	1.79

Source: Appendix –X II

The above table depicts that MPS of NABIL Bank is negatively correlated with its' DY; it is because of high level of changes (increase) in MPS due to small level of changes (increase) in DPS. Here, with the small level of changes in payment of dividend results high level of fluctuation (increase) in MPS of NABIL. In the same way, correlation between MPS with other remaining variables like, DPS, EPS, DPR, P/E Ratio, and NWPS are positively correlated. This means, increase in DPS, EPS, DPR, P/E Ratio and NWPS leads to increase the MPS of NABIL. The relationships between DPS with other variables except DY are positively correlated. But DPS and DY are negatively correlated; it is because of small level of increase in dividend payment leads to high level of fluctuation (increase) in MPS, which leads to decrease the DY. The relationship between EPS and P/E Ratio is negatively correlated, i.e. increase in EPS leads to decrease P/E Ratio. Generally increase or decrease in EPS leads to increase or decrease

in DPS which cause positive effect on MPS, but here in F/Y 2008/09 Hugh amount decrease in EPS leads to increase the MPS, it may be due to signaling effect on capital market, mean may be due to demand and supply of the stock of NABIL Bank, because of this, the relationship between EPS and P/E Ratio is negatively correlated. The relationships of P/E Ratio with DY and NWPS are natively correlated.

The above table of value of $PE(r) \times 6$ NABIL Bank shows that only the correlation coefficients of MPS with DY and P/E Ratio, EPS with NWPS, DPS with NWPS, and NWPS and P/E Ratio are statistically significance.

From the above correlation analysis, MPS of all Banks except SBL is negatively correlated with their dividend component i.e. DY and DPR and positively correlated with DPS; cause to be negative correlation is that, in every F/Y a small percentage increase/decrease in DPS leads greater percentage increase/decrease in MPS of all Banks and some times decrease in DPS leads to increase in MPS during the study period. It shows that dividend is not only a factor which influences the MPS; there is other factor too, which cause the fluctuation in MPS. For EBL the MM Model holds to good point because from F/Y 2008/009 to 2010/11 increase in DPS leads to decrease the MPS. However the MPS of all other remaining sample banks are positively correlated with their dividend components, i.e. DPS. This means increase in DPS also increase the MPS. It points that dividend policy is not irrelevant.

In the above analysis we can also seen that MPS and DPS of all banks Bank is positively correlated with their EPS, i.e. increase and decrease in EPS also effects to increase and decrease in DPS and MPS. It shows that dividend distribution decision is depends on the earnings of the Bank, on the other hand increase in earnings is also positive influence in the stock prices. In the above analysis we can also seen that MPS is positively correlated with P/E Ratio, this implies that small level of increase in EPS leads to greater percentage change in MPS. The MPS of all banks except SBL has negatively correlated with their DY, it shows that increase in MPS decrease the DY. It is because of difference between percentage increase in DPS and MPS, or lower level of increase in DPS leads to higher level of increase in MPS. The causes of being positive relationship between DY and MPS of SBL may be due to no dividend payment in the first F/Y.

Analyzing the relationship of DPS-EPS and EPS-DPR, there is positive correlation for all the banks except HBL and NABIL. It indicates that increase and decrease in EPS leads to increase and decrease in both DPS and DPR. But in the case of HBL and NABIL, the EPS is negatively correlated with DPR , here in these two Bank the increase in EPS doesn't have so much increase in DPS that's why there is negative relationship between EPS and DPR of these two Bank, means high amount increase in EPS leads a lower level of increase in DPS.

Regarding the correlation of DPS with P/E Ratio and NWPS, only P/E Ratio of EBL is negatively correlated with DPS. Otherwise the correlation of DPS with P/E Ratio and NWPS of all Bank are positively correlated

4.2.2 Regression Analysis

Regression analysis is used to determine the statistical relationship between two or more variables and to make prediction of one variable on the basis of others. It is an estimating mathematical equation that relates to dependent variables with independent variables.

4.2.2.1 Regression analysis between MPS on EPS

The major outcomes of regression analysis between MPS on EPS of the sample banks based on the data are shown as follows:

Table 4.18

Regression analysis between MPS on EPS

Bank	Years	(a)	(b)	SEE	S_b	r^2	T-value
EBL	5	664.51	17.78	744.14	23.25	0.16	0.77
SBL	5	299.69	23.87	357.80	43.01	0.09	0.55
HBL	5	195.27	30.30	338.14	12.82	0.66	2.36
NIC	5	610.65	11.16	373.12	28.33	0.05	0.39
NABIL	5	1781.70	19.50	1678.22	36.79	0.09	0.53

Source: ***Appendix–XV final result, for calculation see appendix VIII to XII***

From the above table-4.18, the beta (regression) coefficient of EBL is 17.78, which indicates that one rupee increase in independent variable (EPS) leads to an average Rs.17.78 increase in dependent variable (MPS), if constant (a)=664.51 remains same. The coefficient of multiple determinations (r^2) of EBL is 0.16, this indicates that, 16% variance in MPS is due change in EPS. Since the calculated T-value of EBL (0.77) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, so the result is statically insignificance.

In the case of SBL, the beta (regression) coefficient is 23.87, this indicates that one rupee increase in independent variable (EPS) leads to an average Rs.23.87 increase in dependent variable (MPS), if constant (a)=296.58 remains same. The coefficient of multiple determinations (r^2) of SBL is 0.09%, this indicates that, in total only 9% of variance in MPS is due to change in EPS. Since the calculated T-value of SBL (0.55) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

The beta (regression) coefficient of HBL 30.30, this indicates that one rupee increase in independent variable (EPS) leads to Rs.30.30 increase in dependent variable (MPS), if constant (a)=195.27 remains same. The coefficient of multiple determinations of HBL is 0.25, this tells us that 25% variance in MPS of HBL is due to change in EPS. Since the calculated T-value of HBL (2.38) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statically insignificance.

In the case of NIC Bank, the beta (regression) coefficient of NIC Bank is 11.16; this indicates that one rupee increase in independent variable (EPS) leads to in average Rs.11.16 increase in dependent variable (MPS). The coefficient of multiple determinations of NIC is 0.05, this indicates that, only 5% variance in MPS of the Bank is explained due to change in EPS of the Bank. Since the calculated T-value (0.39) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

In the table 4.13, the beta (regression) coefficient of NABIL is 19.50; this indicates that

one rupee increase in EPS leads to Rs.19.50 rupees increase in MPS if the constant (a)=1781.70 remains same. The coefficient of multiple determinations (r^2) of NABIL is 0.09, this indicates that, only 9% variance in MPS of the Bank is due to change in EPS of the Bank. Since the calculated T-value (0.53) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

4.2.2.2 Regression analysis between MPS on DPS

The major outcomes of regression analysis between MPS on DPS of the sample banks based on the data are shown as follows:

Table 4.19

Regression analysis between MPS on DPS

Bank	Years	(a)	(b)	SEE	S_b	R^2	T-value
EBL	5	1395.89	17.22	758.16	25.56	0.13	0.67
SBL	5	338.58	39.17	232.57	17.85	0.61	2.19
HBL	5	2657.18	103.20	263.15	30.89	0.18	3.34
NIC	5	688.59	10.97	375.03	31.25	0.04	0.35
NABIL	5	531.43	35.81	1361.31	25.41	0.40	1.41

Source: ***Appendix–XV final result, for calculation see appendix VIII to XII***

From the above table-4.19, the beta (regression) coefficient of EBL is 17.22, this indicates that, one rupee increase in independent variable (DPS) leads to an average Rs.17.22 increase in dependent variable (MPS), if constant (a)=1395.89 remains same. The coefficient of multiple determinations (r^2) of EBL is 0.13, this indicates that, 13% variance in MPS is due change in DPS. Since the calculated T-value of EBL (0.67) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, so the result is statically insignificance.

In the case of SBL, the beta (regression) coefficient is 39.17, this indicates that, one rupee increase in independent variable (DPS) leads to an average Rs.39.17 increase in dependent variable (MPS), if constant (a)=338.58 remains same. The coefficient of multiple determinations (r^2) of SBL is 0.61; this indicates that, in total 61% of variance in MPS is due to change in DPS. Since the calculated T-value of SBL (2.19) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

The beta (regression) coefficient of HBL 103.20, this indicates that, one rupee increase in independent variable (DPS) leads to Rs.103.20 increase in dependent variable (MPS), if constant (a)=2657.18 remains same. The coefficient of multiple determinations (r^2) of HBL is 0.18, this indicates that, 18% variance in MPS of HBL is due to change in DPS. Since the calculated T-value of HBL (3.34) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statically significance.

In the case of NIC Bank, the beta (regression) coefficient of NIC Bank is 10.97; this

indicates that, one rupee increase in independent variable (DPS) leads to in average Rs.10.97 increase in dependent variable (MPS). The coefficient of multiple determinations of NIC is o.04, this indicates that, 4% variance in MPS of the Bank is explained due to change in DPS of the Bank. Since the calculated T-value (0.35) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

In the table 4.14, the beta (regression) coefficient of NABIL is 35.81; this indicates that, one rupee increase in DPS leads to Rs.35.81 rupees increase in MPS if the constant (a)=531.43 remains same. The coefficient of multiple determinations (r^2) of NABIL is 0.40, this indicates that, only 40% variance in MPS of the Bank is due to change in DPS of the Bank. Since the calculated T-value (1.41) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insigficance.

4.2.2.3 Regression analysis between MPS on DPR

The major outcomes of regression analysis between MPS on DPR of the sample banks based on the collected data are shown as follows:

Table 4.20
Regression analysis between MPS on DPR

Bank	Years	(a)	(b)	SEE	S_b	R^2	T-value
EBL	5	370.08	34.60	742.60	44.65	0.17	0.77
SBL	5	424.87	5.69	266.74	3.32	0.49	1.71
HBL	5	2476.86	-13.03	461.14	10.25	0.17	1.27
NIC	5	1868.97	-17.39	212.54	6.71	0.69	2.59
NABIL	5	1610.09	65.17	1421.47	51.95	0.35	1.25

Source: ***Appendix–XV final result, for calculation see appendix VIII to XII***

From the above table-4.20, the beta (regression) coefficient of EBL is 34.60, this indicates that one rupee increase in independent variable (DPR) leads to an average Rs.34.60 increase in dependent variable (MPS), if constant (a)=370.08 remains same. The coefficient of multiple determinations (r^2) of EBL is 0.17, this indicates that, 17% variance in MPS is due change in DPR. Since the calculated T-value of EBL (0.77) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, so

the result is statically insignificance.

In the case of SBL, the beta (regression) coefficient is 5.69, this indicates that one rupee increase in independent variable (DPR) leads to an average Rs.5.9 increase in dependent variable (MPS), if constant (a)=424.87 remains same. The coefficient of multiple determinations (r^2) of SBL is 0.49; this indicates that, in total 49% of variance in MPS is due to change in DPR. Since the calculated T-value of SBL (1.71) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

The beta (regression) coefficient of HBL -13.03 this indicates that one rupee increase in independent variable (DPR) leads to Rs.13.03 decrease in dependent variable (MPS), if constant (a)=2476.86 remains same. The coefficient of multiple determinations (r^2) of HBL is 0.17, this tells us that 17% variance in MPS of HBL is due to change in DPR. Since the calculated T-value of HBL (1.27) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statically insignificance.

In the case of NIC Bank, the beta (regression) coefficient of NIC Bank is -17.39, which indicates that one rupee increase in independent variable (DPR) leads to in average Rs.17.39 decrease in dependent variable (MPS). The coefficient of multiple determinations of NIC is o.69, which tells us that 69% variance in MPS of the Bank is explained due to change in DPR of the Bank. Since the calculated T-value (2.49) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

In the table 4.20, the beta (regression) coefficient of NABIL is 65.17; this indicates that one rupee increase in DPR leads to Rs.65.17 rupees increase in MPS if the constant (a)=1610.09 remains same. The coefficient of multiple determinations (r^2) of NABIL is 0.35, this indicates that only 35% variance in MPS of the Bank is due to change in DPR of the Bank. Since the calculated T-value (1.25) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

4.2.2.4 Regression analysis between MPS on P/E Ratio

The major outcomes of regression analysis between MPS on P/E Ratio of the sample banks based on the collected data are shown as follows:

Table 4.21

Regression analysis between MPS on P/E Ratio

Bank	Years	(a)	(b)	SEE	S_b	R^2	T-value
EBL	5	35.57	84.82	418.81	29.41	0.74	2.88
SBL	5	39.92	17.06	165.81	4.85	0.81	3.52
HBL	5	483.20	73.82	386.83	39.15	0.24	1.89
NIC	5	752.13	40.98	211.03	15.64	0.69	2.62
NABIL	5	166.88	106.16	822.16	32.50	0.77	3.27

Source: ***Appendix–XV final result, for calculation see appendix VIII to XII***

From the above table-4.21, the beta (regression) coefficient of EBL is 84.82, this indicates that one rupee increase in independent variable (P/E Ratio) leads to an average Rs.84.82 increase in dependent variable (MPS), if constant (a)=35.57 remains same. The coefficient of multiple determinations (r^2) of EBL is 0.74, this indicates that, 74% variance in MPS is due change in P/E Ratio. Since the calculated T-value of EBL (2.88) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, so the result is statically significance.

In the case of SBL, the beta (regression) coefficient is 17.06, this indicates that one rupee increase in independent variable (P/E Ratio) leads to an average Rs.17.06 increase in dependent variable (MPS), if constant (a)=39.92 remains same. The coefficient of multiple determinations (r^2) of SBL is 0.81, this tells us that, in total 81% of variance in MPS is due to change in P/E Ratio. Since the calculated T-value of SBL (3.52) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically significance.

The beta (regression) coefficient of HBL 73.82 this indicates that one rupee increase in independent variable (P/E Ratio) leads to Rs.73.82 increase in dependent variable (MPS), if constant (a)=483.20 remains same. The coefficient of multiple determinations (r^2) of HBL is 0.24, this indicates that, 24% variance in MPS of HBL is due to change in P/E Ratio. Since the calculated T-value of HBL (1.89) is less than tabulated T-value

(2.78) at 5% level of significance and 4 degree of freedom, hence the result is statically insignificance.

In the case of NIC Bank, the beta (regression) coefficient of NIC Bank is 40.98, which indicates that one rupee increase in independent variable (P/E Ratio) leads to in average Rs.40.89 increase in dependent variable (MPS). The coefficient of multiple determinations of NIC is o.69, which tells us that 69% variance in MPS of the Bank is explained due to change in P/E Ratio of the Bank. Since the calculated T-value (2.62) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

In the same way beta (regression) coefficient of NABIL is 106.16, this indicates that, one rupee increase in P/E Ratio leads to Rs.106.16 rupees increase in MPS if the constant (a)=166.88 remains same. The coefficient of multiple determinations (r^2) of NABIL is 0.77, this indicates that, 77% variance in MPS of the Bank is due to change in P/E Ratio of the Bank. Since the calculated T-value (3.27) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically significance.

4.2.2.5 Regression analysis between MPS on DY

The major outcomes of regression analysis between MPS on DY of the sample banks based on the collected data are shown as follows:

Table 4.22

Regression analysis between MPS on DY

Bank	Year	(a)	(b)	SEE	S_b	R^2	T-value
EBL	5	3047.21	-376.56	718.89	410.80	0.69	0.92
SBL	5	572.22	126.35	356.16	219.85	0.10	0.57
HBL	5	1819.50	-94.58	547.96	182.65	0.38	0.52
NIC	5	1326.08	-185.69	300.26	135.87	0.38	1.37
NABIL	5	7861.90	-1481.09	1021.23	611.51	0.66	2.42

Source: ***Appendix–XV final result, for calculation see appendix VIII to XII***

From the above table-4.22, the beta (regression) coefficient of EBL is -376.56, this indicates that, one rupee increase in independent variable (DY) leads to an average

Rs.376.56 decrease in dependent variable (MPS), if constant (a)=3047.21 remains same. The coefficient of multiple determinations (r^2) of EBL is 0.69, this indicates that, 69% variance in MPS is due change in DY. Since the calculated T-value of EBL (0.92) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, so the result is statically insignificance.

In the case of SBL, the beta (regression) coefficient is 126.35, this indicates that, one rupee increase in independent variable (DY) leads to an average Rs.126.35 increase in dependent variable (MPS), if constant (a)=572.22 remains same. The coefficient of multiple determinations (r^2) of SBL is 0.10; this indicates that, in total 10% of variance in MPS is due to change in DY. Since the calculated T-value of SBL (0.57) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

The beta (regression) coefficient of HBL is -94.58, this indicates that, one rupee decrease in independent variable (DY) leads to Rs.94.58 decrease in dependent variable (MPS), if constant (a)=1819.50 remains same. The coefficient of multiple determinations (r^2) of HBL is 0.38, this indicates that, 38% variance in MPS of HBL is due to change in DY. Since the calculated T-value of HBL (0.52) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statically insignificance.

In the case of NIC Bank, the beta (regression) coefficient of NIC Bank is -185.69, this indicates that, one rupee increase in independent variable (DY) leads to in average Rs.185.69 decrease in dependent variable (MPS) if constants (a)=1326.08 remains same. The coefficient of multiple determinations of NIC is o.38, which tells us that 38% variance in MPS of the Bank is explained due to change in DY of the Bank. Since the calculated T-value (1.37) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

In the same way, beta (regression) coefficient of NABIL is -1481.09, this indicates that, one rupee increase in DY leads to Rs.1481.09 rupees decrease in MPS if the constant (a)=7861.90 remains same. The coefficient of multiple determinations (r^2) of NABIL is 0.66, this indicates that, 66% variance in MPS of the Bank is due to change in DY of the Bank. Since the calculated T-value (2.42) is less than tabulated T-value (2.78) at 5%

level of significance and 4 degree of freedom, hence the result is statistically insignificance.

4.2.2.6 Regression analysis between MPS on NWPS

The major outcomes of regression analysis between MPS on NWPS of the sample banks based on the collected data are shown as follows:

Table 4.23

Regression analysis between MPS on NWPS

Bank	Years	(a)	(b)	SEE	S_b	R^2	T-value
EBL	5	53.56	7.18	691.31	6.69	0.28	1.07
SBL	5	690.04	0.33	375.35	20.28	0.01	0.02
HBL	5	4626.57	24.93	305.82	9.11	0.20	2.79
NIC	5	2291.74	23.64	230.56	10.30	0.64	2.29
NABIL	5	465.18	10.06	1620.29	13.94	0.14	0.72

Source: ***Appendix–XV final result, for calculation see appendix VIII to XII***

From the above table-4.23, the beta (regression) coefficient of EBL is 7.18, this indicates that, one rupee increase in independent variable (NWPS) leads to an average Rs.7.18 increase in dependent variable (MPS), if constant (a)=53.56 remains same. The coefficient of multiple determinations (r^2) of EBL is 0.28, this indicates that, 28% variance in MPS is due change in NWPS. Since the calculated T-value of EBL (1.07) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, so the result is statically insignificance.

In the case of SBL, the beta (regression) coefficient is 0.33, this indicates that, one rupee increase in independent variable (NWPS) leads to an average Rs.0.33 increase in dependent variable (MPS), if constant (a)=690.04 remain same. The coefficient of multiple determinations (r^2) of SBL is 0.01, this indicates that, in total 1% of variance in MPS is due to change in NWPS. Since the calculated T-value of SBL (0.02) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

The beta (regression) coefficient of HBL 24.93 this indicates that, one rupee increase in independent variable (NWPS) leads to Rs.24.93 increase in dependent variable (MPS), if constant (a)=4626.57 remains same. The coefficient of multiple determinations (r^2) of HBL is 0.20, this indicates that 20% variance in MPS of HBL is due to change in NWPS. Since the calculated T-value of HBL (2.79) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statically significance.

In the case of NIC Bank, the beta (regression) coefficient of NIC Bank is 23.64, this

indicates that, one rupee increase in independent variable (NWPS) leads to in average Rs.23.64 increase in dependent variable (MPS) if constants (a)=2291.74 remains same. The coefficient of multiple determinations of NIC is o.64, which indicates that 64% variance in MPS of the Bank is explained due to change in NWPS of the Bank. Since the calculated T-value (2.29) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

In the same way beta (regression) coefficient of NABIL is 10.06, this indicates that, one rupee increase in NWPS leads to Rs.10.06 rupees increase in MPS if the constant (a)=465.18 remain same. The coefficient of multiple determinations (r^2) of NABIL is 0.14, this indicates that, only 14% variance in MPS of the Bank is due to change in NWPS of the Bank. Since the calculated T-value (0.72) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

4.2.2.7 Regression analysis between DPS on EPS

The major outcomes of regression analysis between DPS on EPS of the sample banks based on the collected data are shown as follows:

Table 4.24

Regression analysis between DPS on EPS

Bank	Years	(a)	(b)	SEE	S_b	R^2	T-value
EBL	5	33.08	0.92	1.19	0.04	0.99	24.87
SBL	5	2.38	0.42	7.24	0.87	0.07	0.49
HBL	5	30.92	0.17	1.39	0.05	0.26	3.14
NIC	5	0.83	0.77	3.67	0.28	0.72	2.79
NABIL	5	2.22	0.88	20.57	0.45	0.56	1.95

Source: ***Appendix–XV final result, for calculation see appendix VIII to XII***

From the above table-4.24 the beta (regression) coefficient of EBL is 0.92, ths indicates that, one rupee increase in independent variable (EPS) leads to an average Rs.0.92 increase in dependent variable (DPS), if constant (a)=33.08 remains same. The coefficient of multiple determinations (r^2) of EBL is 0.99, this tells us that, 99% variance in DPS is due change in EPS. Since the calculated T-value of EBL (24.87) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, so the result is statically significance.

In the case of SBL, the beta (regression) coefficient is 0.42, this indicates that, one rupee increase in independent variable (EPS) leads to an average Rs.0.42 increase in dependent variable (DPS), if constant (a)=2.38 remain same. The coefficient of multiple determinations (r^2) of SBL is 0.07; this indicates that, in total only 7% of variance in DPS is due to change in EPS. Since the calculated T-value of SBL (0.49) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

The beta (regression) coefficient of HBL 0.17 which indicates that one rupee increase in independent variable (EPS) leads to Rs.0.17 increase in dependent variable (DPS), if constant (a)=30.92 remains same. The coefficient of multiple determinations (r^2) of HBL is 0.26, this tells us that 26% variance in DPS of HBL is due to change in EPS. Since the calculated T-value of HBL (3.14) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statically significance.

In the case of NIC Bank, the beta (regression) coefficient of NIC Bank is 0.77, this indicates that one rupee increase in independent variable (EPS) leads to in average Rs.0.77 increase in dependent variable (DPS) if constants (a)=0.83 remains same. The coefficient of multiple determinations of NIC is o.72, this indicates that, 72% variance in DPS of the Bank is explained due to change in EPS of the Bank. Since the calculated T-value (2.79) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically significance.

Similarly, beta (regression) coefficient of NABIL is 0.88, which indicates that one rupee increase in EPS leads to Rs.0.88 rupees increase in DPS if the constant (a)=2.22 remain same. The coefficient of multiple determinations (r^2) of NABIL is 0.56, which tells us that only 56% variance in DPS of the Bank is due to change in EPS of the Bank. Since the calculated T-value (1.95) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

4.2.2.8 Regression analysis between DPS on NWPS

The major outcomes of regression analysis between DPS on NWPS of the sample banks based on the collected data are shown as follows:

Table 4.25

Regression analysis between DPS on NWPS

Bank	Years	(a)	(b)	SEE	S_b	R^2	T-value
EBL	5	37.48	0.28	3.14	0.03	0.96	9.27
SBL	5	22.46	0.25	7.05	0.38	0.12	0.64
HBL	5	2.22	0.17	3.61	0.11	0.46	1.61
NIC	5	18.55	0.28	5.92	0.26	0.27	1.05
NABIL	5	37.35	0.38	17.26	0.15	0.69	2.88

Source: ***Appendix–XV final result, for calculation see appendix VIII to XII***

From the above table-4.25, the beta (regression) coefficient of EBL is 0.28, this indicates that, one rupee increase in independent variable (NWPS) leads to an average Rs.0.28 increase in dependent variable (DPS), if constant (a)=37.48 remains same. The coefficient of multiple determinations (r^2) of EBL is 0.96, this indicates that, 96% variance in DPS is due change in NWPS. Since the calculated T-value of EBL (9.27.) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, so the result is statically significance.

In the case of SBL, the beta (regression) coefficient is 0.25, this indicates that, one rupee increase in independent variable (NWPS) leads to an average Rs.0.25 increase in dependent variable (DPS), if constant (a)=22.46 remains same. The coefficient of multiple determinations (r^2) of SBL is 0.12; this indicates that, in total only 12% of variance in DPS is due to change in NWPS. Since the calculated T-value of SBL (0.64) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

The beta (regression) coefficient of HBL 0.17 this indicates that, one rupee increase in independent variable (NWPS) leads to Rs.0.17 increase in dependent variable (DPS), if constant (a)=2.22 remains same. The coefficient of multiple determinations (r^2) of HBL is 0.46, this indicates that, 46% variance in DPS of HBL is due to change in NWPS. Since the calculated T-value of HBL (1.61) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statically insignificance.

In the case of NIC Bank, the beta (regression) coefficient of NIC Bank is 0.28, this indicates that, one rupee increase in independent variable (NWPS) leads to in average Rs.0.28 increase in dependent variable (DPS) if constants (a)=18.55 remains same. The coefficient of multiple determinations of NIC is o.27, this indicates that, 27% variance in DPS of the Bank is explained due to change in NWPS of the Bank. Since the calculated T-value (1.05) is less than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically insignificance.

In the same way beta (regression) coefficient of NABIL is 0.38, this indicates that, one rupee increase in NWPS leads to Rs0.38 rupees increase in DPS if the constant (a)=37.15 remains same. The coefficient of multiple determinations (r^2) of NABIL is 0.69, this indicates that, only 69% variance in DPS of the Bank is due to change in NWPS of the Bank. Since the calculated T-value (2.88) is higher than tabulated T-value (2.78) at 5% level of significance and 4 degree of freedom, hence the result is statistically significance.

4.3 Major findings of the study

To accomplish specific results, different financial and statistical tools and model were used. After analysis of the different variables through the application of various financial as well as statistical models provide different kinds of results. The major findings of the study reveled below:

4.3.1 Findings based on comparative study of financial indicators

1. Earning Per Share (EPS)

- The average EPS of the sample banks under this study shown that a positive result, but the C.V. of the EPS of sample banks shows that there is no consistency in EPS.
- The average EPS Rs.112.19 of NABIL is higher than other sample banks. But, the C.V. analysis of EPS of EBL (17%) shows that there is more consistency in EPS of HBL as compared to other banks.
- In comparison of standard deviation of all sample banks suggests that, SBL (3.72) has less fluctuation in EPS than other sample banks.

2. Dividend Per Share (DPS)

- DPS of sample banks shows that, there is no regularity in dividend payment. There is no any dividend payment of SBL in F/Y 2005/06.
- The average DPS of NABIL Rs.96 is higher than other sample banks. Higher DPS creates positive attitude of the shareholders towards the Bank, which consequently helps to increase the market value of share. Similarly, the C.V. analysis of DPS of HBL (10%) is more consistent as compared to other sample banks.
- In comparison of standard deviation of all sample banks suggests that the HBL (3.81) has less fluctuation in DPS than other sample banks.

3. Dividend Payout Ratio (DPR)

- DPR of all sample Bank during the study period are highly fluctuated but the DPR of EBL and HBL are in increasing trend, whereas, DPR of SBL is in decreasing trend.
- The average DPR of NABIL 85.61% is highest among the sample Bank during the study period. It shows that, NABIL paid highest dividend from its' earning among the sample banks during the study period. Analysis of C.V. of SBL (66.44%) shows that, SBL is highly inconsistency in the case of dividend payment among all sample banks.
- In comparison of standard deviation of DPR of sample banks, EBL (7.44) is highly consistent in the payment of dividend considering their earnings then other sample banks.

4. Market Price Per Share (MPS)

- MPS of sample Bank during the study period clearly indicates that, in early stage of study period it is in increasing trend and after F/Y 2007/08 it is gradually decreases.
- The average MPS of NABIL Rs.3969.60 is higher than other sample banks; this indicates that, there is greater chance to reap capital gain for investors through investing in share of NABIL Bank. But the C.V. of EBL 28.57% shows that, there high consistency in MPS of EBL than among the sample banks, this indicates that, there is less chance of capital loss from the investment of share of EBL.

- In comparison of standard deviation of MPS of sample banks SBL has less variability in MPS.

5. Price Earning Ratio (P/E Ratio)

- The average P/E Ratio of SBL 203.50 is highest among the sample banks during study period. This indicates that, there is high chance getting return by reinvesting the earning. Where as C.V. of HBL 16.63% is less than other banks tell us that, there is less variability in P/E Ratio of HBL among the sample banks. Means, effect of reinvestment of earning of HBL is nominal to its MPS.
- In comparison of standard deviation, HBL has less S.D. than other sample banks; this indicates that, there is less variation of effects of reinvestment of earnings to its MPS.

6. Dividend Yield (DY)

- The DY of sample banks during the study period are in fluctuating trend as same direction as MPS and DPS, this indicates that, change in DPS leads to change in MPS in same direction. And it can say that, there is high level of impact of DPS on MPS.
- The average DY of HBL 2.95% is higher among the sample banks during the study period, this indicates that, HBL paid high dividend among the sample banks. But The C.V. of DY of NABIL 28.42% is less than among the sample banks during the study period; this indicates that, there is high chance of getting dividend yield by investing in NABIL.
- In comparison of S.D. of DY of all banks, SBL has less variability in DY.

7. Net Worth Per Share (NWPS)

- The NWPS of all sample banks except NABIL are in increasing trend during the study period.
- The average NWPS of NABIL Bank Rs.348.40 is highest as compare to other sample banks. Where as the C.V. of HBL 6.13% is lowest than other sample banks this indicates that, HBL is high consistency in its NWPS.
- The S.D. of SBL 8.28 shows that there low variance in NWPS of SBL among the sample banks.

4.3.2 Findings based on comparative study of statistical indicators

1. Finding based on Correlation Analysis

- The correlation coefficient analysis indicates that the relationship between MPS and DPS of EBL, SBL, HBL, NIC and NABIL has positive correlation. The analysis shows that, in average there is positive impact of dividend on MPS. That is, increase in DPS leads to increase in MPS of the banks and vice-versa.
- The relationship of MPS of all banks on EPS, P/E Ratio and NWPS are positive, this indicates that, increase in EPS, P/E Ratio and NWPS also increase the MPS of the banks.
- The relationships of MPS on DY of all banks except SBL are negative. From this, it came to know that small level of change (increase/decrease) in DPS leads to high level of changes (increase/decrease) in MPS. The reason to be positive relationship between MPS on DY of SBL may be due to no payment of dividend in first F/Y.
- The relationship between EPS and DPS of all sample banks are positive. From this, it came to know that increase in EPS also increase the DPS and vice-versa.
- The relationship between EPS and DPR of all banks except NIC and SBL are positive. The negative relation of EPS and DPR of NIC is due to nominal level of increase/decrease in EPS cause high level of increase/decrease in DPS. On the other hand, SBL has did not pay any dividend in first F/Y that's why relationship between DPS and DPR is negative.
- Correlation between EPS and P/E Ratio of HBL and NIC are positive, it tells us that increase in EPS leads to increase DPS which leads to increase in MPS of the Bank. But the there is negative relation between EPS and P/E Ratio of EBL, SBL and NABIL.

2. Finding based on Regression Analysis

- The regression coefficients (b) between MPS on EPS of all banks are positive. It makes an idea that, the impact of EPS on MPS is positive, i.e. increase/decrease in EPS has also some level of increase/decrease in MPS. The regression coefficient (b) of HBL is 30.30 is higher than among sample banks. This indicates that, EPS of NIC might have high impact on its MPS as compared to other sample banks.

- The t-value between MPS and EPS of all banks shows that, all banks' results are statically insignificance
- The regression coefficients between MPS on DPS of all banks are positive. From the study, it came to know that, in average there is positive impact of DPS on MPS. And positive regression coefficient (b) between MPS on DPS indicates that, increase/decrease in DPS also some level of increase/decrease in MPS.
- The t-value between MPS on DPS shows that, only the result of HBL is statistically significance. And the results of other banks are statistically insignificance.
- The regression coefficient (b) between MPS on DPR of NABIL is 65.17, which is highest among the sample banks. It gives an idea that NABIL pays high dividend from its' earning as compared to other sample banks. The coefficient of multiple determinations (r^2) of NIC is 0.69 which is highest among the sample banks, and this indicates that, the DPR of EBL has high impact on MPS among the sample banks. In average the positive regression coefficient (b) between DPR on MPS shows that, increase/decrease in DPR also some level increase/decrease in MPS.
- The t-value between MPS on DPR tells us that, the result of all banks are statistically insignificance.
- The regression coefficient (b) between MPS on P/E Ratio of all sample banks are positive, this means, there is positive impact of earning on market price of stock, i.e. increase in EPS leads to increase the MPS which automatically increase the P/E Ratio of the firm. The beta coefficient between MPS on P/E Ratio of NABIL is 106.16 is highest among the sample banks, this gives an idea that the P/E Ratio of EBL has high impact on MPS as compared to other sample banks.
- The t-value between MPS on P/E Ratio tells us that the results of all sample banks except HBL and NIC regarding this are statistically significance.
- The regression coefficient (b) between MPS on DY of all sample banks except SBL are negative, this indicates that, low level of increase in DPS effects high level of increase in MPS which decrease the DY. And this gives the negative beta coefficient between MPS on DY.
- The t-value between MPS on DY tells us that, the results of all sample banks are statistically insignificance.
- The regression coefficients (b) between MPS on NWPS of all banks are positive. As compared of coefficient of determination (r^2) of all banks the HBL has high

coefficient of determination which tell us that, NWPS of EBL has high impact on MPS.

- The t-value between MPS on NWPS tells us that only the result of HBL and is statistically significance.
- The regression coefficient between DPS on EPS of all banks are positive, this indicates that, increase/decrease in EPS also leads to some level of increase and decrease in DPS, i.e. there is positive impact of EPS on DPS. As compared to all sample banks, the beta of EBL 0.92 is highest among the sample banks, which gives and an idea that, EBL has paid high dividend among all sample banks.
- The t-value between DPS on EPS tells us that only the results of EBL, HBL and NIC are statistically significance. And the other remaining banks' results are statistically insignificance.
- The regression coefficients (b) between DPS on NWPS of all banks are positive. This indicates that, there is positive impact of NWPS on DPS. Coefficient of determination (r^2) between DPS on NWPS of NABIL is 0.38 which is highest among the sample banks and this tells us that, there is high positive impact of NWPS on DPS of NABIL among the sample banks.
- The t-value between DPS on NWPS tells us that, only the result of EBL and NABIL are statistically significance.

4.4 Hypothesis Analysis :

The research suggest that dividend policy has an impact on Market Price of Stock as it is effected by the dividend related financial variables such as DPS, DPR & DY either positively or negatively. During the study period there exist positive relation between dividend and stock price. So we can say that the dividend policy as an impact on market price of stock.

CHATER-V

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents the summary of the study and draws conclusions from the study based on analysis made in the previous chapter. The suggestions are provided to the sample banks so that they can improve the policy and pattern they are following.

5.1 Summary

Dividends are payments made to shareholders from a firm's earnings in return to their investment. Thus, dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained or reinvest in the firm. Dividend payment to shareholder is taken as best in such a condition because shareholders have investment opportunities elsewhere, on the other hand, paying dividends to shareholders is an effective way to pure new investors and to pour their funds in the shares. In the changed context of encouraging secondary market, it is time to study influences of other factors on dividend and application of dividend on market price of stock. The study has covered some such factors. However, it is not enough due to some limitations.

The theoretical statement of this study is to study the dividend policy and the impact of dividend policy on market price of stock. Therefore it is concluded that more or less the dividend policy depends on the earning per share of the company and the MPS has more or less depends on DPS. The earning per share and dividend per share having positive relation may also effect on market price of stock.

Considering the time and resource constraint only five commercial banks namely EBL, SBL, HBL, NIC and NABIL have been selected as sample banks in study to fulfill the objectives of the study. The study period cover only last five fiscal years from 2006/07 to 2010/11. The available secondary data have been analyzed using various financial and statistical tools in the study.

The market price of stock is affected by the financial position and the dividend paid by the firms. In this regards the MPS of the sample banks is seem to be fluctuated. It is denoted the Nepalese investors are not treated fairy. The lack of financial knowledge and

the market inefficiency has affected the market price of the share of all the sample banks

Dividend effects on earning price and market price of stock, and earning per share effects on dividend per share has been a vital issue. In order to assess the impact of DPS on MPS and EPS on DPS, available information from different sectors were reviewed and analyzed. Correlation coefficient and regression analysis have been done to make research more reliable. And in every regression analysis t-test has been tested at 5% level of significance.

Dividend plays the important role in the valuation, off course, earning is important for commercial banks, but share holder also expect regular dividend. So, earnings and dividends are closely related. They should be viewed as complementary. Those commercial banks have high earnings with paying high regular dividend commands high market price. There for, it is essential to pay regular dividends because it serves as a simple and comprehensive signal of management's interpretation of the firm's recent performance and its future prospects

.

Ever since, Nepal adopted liberal and open market policy in 1984, public enterprises have frown rapidly in the last twenty five years. There have been a lots of failure of public companies as we as success. The enthusiasm of investors have waxed and waned with the economic cycle in common with the general trend of stock markets worldwide. The stockholders have a high desire for their share to have high market price and their shares to earn a high dividend. So the distribution of dividends is one of the most crucial and main factors to keep shareholders happy.

The specific objectives of this study as to find out the dividend policy adopted by the Nepalese commercial banks and the effect of the dividend on the market price of stock. Examine the relationship between DPS and MPS, DPS and EPS and EPS and MPS as well as providing workable suggestions for all rational managers and other interested parties. The study is expected to be significance for the promotion of industrialization through the sound condition of enterprises and industry with the help of efficient financial management.

This study organized in five chapters, viz, 1) introduction, 2) review of literature, 3)

research methodology, 4) data presentation analysis and 5) summary conclusion and recommendations.

5.2 Conclusion

From the analysis of financial and statistical indicators of all the sample banks, following conclusions are drawn:

1. There is no any consistency in the dividend policy of the sample firms, therefore some times the result of the different test accept the theoretical assumptions of dividend policy and some times do not.
2. Researcher found the majority of Nepalese firm gives first priority to "earnings" to get into the decision of dividend. The second priority goes to the "cash availability" and the third priority is given to "past dividend". After all "concern about maintaining or increasing the stock price" priority also influences the dividend policy of the firm in Nepal.
3. The market price per share (MPS) is affected by the dividend related financial variables such as DPS, DPR and DY either positively or negatively. The change in DPS affects the stock price differently in different banks. During the study period, there exists positive relation between dividend and stock price. Beside this the stock price largely depends upon dividend.
4. The stock price is also affected by other factors such as earning per share; price earning ratio, net worth per share etc. their effects is also different for different banks.
5. The dividend per share is affected by earning per share, retention ratio, net profit and net worth per share differently in different banks.
6. Analysis of the average DPR of sample banks shows that, out of the total income, 68.78% is distributed as dividend in general. HBL, NIC and NABIL has the average DPR of 76.59%, 73.66% and 85.61% respectively, which is above the average DPR of all sample banks. EBL and SBL have below average DPR.
7. The coefficient of variation (C.V.) of the average DPR of the banks is 25.45%, this indicates that, the dividend policies of the banks are not stable. There is no strategy of calculating growth in the dividends paid by the banks, which shows that the dividend policies of the banks are not uniform and consistent. There is fluctuation in the dividend even if the banks are making profit regularly.

8. There is large fluctuation in dividend in each year. There are not certain criteria for paying dividend. Dividend is distributed at an ad hoc basis. From this the researcher of this study concludes that there is no long-term vision regarding the dividend policy.
9. Market price per share of listed commercial banks under study is higher than net worth per share. There exist vast difference between MPS and NWPS. This situation clearly indicates that, the investors are not comparing book value and market value of shares. They are investing in stock to gain advantage from capital appreciation rather than dividends.

5.3 Recommendations

Based on the analysis, the following recommendations and suggestions are recommended to the concerned parties:

- The legal rule for treatment of dividend is for the smooth growth of the banks as well as of national economy, but there is lack of proper legal provisions regarding the dividend payment. The government as well as Nepal Rastra Bank (central Bank of Nepal), SEBON, NEPSE should pay their attention in this matter for prescribing certain provision and rules regarding the percentage of earning as payment of dividend.
- The commercial banks are paying dividend without adopting any appropriate policy. It seems impossible to maximize shareholders wealth. The commercial banks' management is advised to adopt the long-term dividend policy also. It is a stable dividend policy, constant payout ratio or low regular plus extra dividend policy, which helps to boost up the wealth of shareholders.
- The dividend payment policy of the commercial banks is neither stable nor constantly growing. Due to the uncertainty and high degree of risk, the market price per share may be adversely affected. So the commercial banks should follow either stable or constantly growing dividend policy.
- Nepalese investors are investing their fund on commercial banks haphazardly, randomly and without consulting capital market analyst. So, they are suggested to analyze the capital market situation before investing their funds in banks.

- EPS and DPS play a vital role to determine the market price of stock and also indicate the financial performance of Bank. Higher EPS and DPS indicate, the banks are well performing and healthiness.
- While making dividend decision, a minor mistake may lead the Bank to serious crisis. Due to this reason, it is advised to adopt optimum dividend decision based on the following criteria:
    - Optimum retention for excellent expansion and modernization of Bank.
    - Stable or consistency in dividend payment.
    - Optimum dividend so that market value per share will increase rapidly i.e. net present value or shareholders wealth maximization.

Finally, after making this study, it is realized that dividend payment practice of the commercial banks are not regular in Nepal. Banks are organizations established to run a long period in the small economy of Nepal. There are already over three dozen banks in Nepal and they have neck and neck competition. So, even a small wrong decision can lead to bankruptcy. So, there is necessity of legal provisions and rules for prescribing certain policy regarding the dividend payment in the banking sector. For this purpose the concern authority i.e. Nepal government, Nepal Rastra Bank, SEBON and NEPSE should be conscious about formulation and implementation of rule and regulation regarding dividend payment. This will helps to regularize the dividend policy of financial sector of Nepal.

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APPENDIX – I

Arithmetic Mean $\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots\ldots + X_n}{N} = \frac{\sum X}{N}$

BANK	Year					
	2006/07	2007/08	2008/09	2009/10	2010/11	$\frac{\sum X}{N}$
EBL	62.78	78.42	91.82	99.99	100.2	**86.63**
SBL	13.05	15.88	17.29	22.89	21.99	**18.22**
HBL	59.24	60.66	62.74	61.9	31.8	**55.27**
NIC	16.1	24.01	25.75	27.83	34.3	**25.60**
NABIL	129.21	137.08	109.31	106.76	78.61	**112.19**

Standard Deviation $\delta = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$

	Bank				
	EBL	SBL	HBL	NIC	NABIL
S.D.(δ)	**14.32**	**3.72**	**11.79**	**5.89**	**20.37**

Coefficient of Variation (C.V.) = $\frac{\delta}{\overline{X}} \times 100$

	Bank				
	EBL	SBL	HBL	NIC	NABIL
C.V.	**0.17**	**0.2**	**0.21**	**0.23**	**0.18**

APPENDIX – II

Arithmetic Mean $\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots\ldots + X_n}{N} = \frac{\sum X}{N}$

BANK	Year					
	2006/07	2007/08	2008/09	2009/10	2010/11	$\frac{\sum X}{N}$
EBL	25	40	50	60	60	**47**
SBL	0	15.79	15.79	10.53	8.42	**10.11**
HBL	35	40	45	43.56	36.84	**40.08**
NIC	10.53	21.05	21.05	15.79	26.32	**18.95**
NABIL	85	140	100	85	70	**96**

Standard Deviation $\delta = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$

	Bank				
	EBL	SBL	HBL	NIC	NABIL
S.D.(δ)	**13.27**	**5.83**	**3.81**	**5.37**	**23.96**

Coefficient of Variation (C.V.) = $\frac{\delta}{\overline{X}} \times 100$

	Bank				
	EBL	SBL	HBL	NIC	NABIL
C.V.	**0.28**	**0.58**	**0.1**	**0.28**	**0.25**

APPENDIX – III

Arithmetic Mean $\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots + X_n}{N} = \frac{\sum X}{N}$

BANK	Year					
	2006/07	2007/08	2008/09	2009/10	2010/11	$\frac{\sum X}{N}$
EBL	39.82	51.01	54.45	60.01	59.9	**53.04**
SBL	0	99.43	88.21	46	38.29	**54.39**
HBL	59.08	65.94	71.72	70.37	115.85	**76.59**
NIC	65.4	54.32	47.31	35.81	76.73	**55.92**
NABIL	65.78	102.13	91.48	79.62	89.05	**85.61**

Standard Deviation $\delta = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$

	Bank				
	EBL	SBL	HBL	NIC	NABIL
S.D.(δ)	**7.44**	**35.95**	**20.12**	**14.17**	**12.23**

Coefficient of Variation (C.V.) = $\frac{\delta}{\overline{X}} \times 100$

	Bank				
	EBL	SBL	HBL	NIC	NABIL
C.V.	**14.02**	**66.09**	**26.27**	**23.34**	**14.29**

APPENDIX – IV

Arithmetic Mean $\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots + X_n}{N} = \frac{\sum X}{N}$

BANK	Year	

	2006/07	2007/08	2008/09	2009/10	2010/11	$\frac{\sum X}{N}$
EBL	1379	2430	3132	2455	1630	**2205**
SBL	360	778	1090	1000	444	**734.20**
HBL	1100	1740	1980	1760	816	**1479.20**
NIC	496	950	1284	1126	626	**896.40**
NABIL	2240	5050	5275	4899	2384	**3970**

Standard Deviation $\delta = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$

	Bank				
	EBL	**SBL**	**HBL**	**NIC**	**NABIL**
S.D.(δ)	**630.10**	**291**	**443.01**	**296.4**	**1359**

Coefficient of Variation (C.V.) = $\frac{\delta}{\overline{X}} \times 100$

	Bank				
	EBL	**SBL**	**HBL**	**NIC**	**NABIL**
C.V.	**28.57**	**39.62**	**29.95**	**33.07**	**34.25**

APPENDIX – V

Arithmetic Mean $\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots\ldots + X_n}{N} = \frac{\sum X}{N}$

BANK	Year					
	2006/07	**2007/08**	**2008/09**	**2009/10**	**2010/11**	$\frac{\sum X}{N}$
EBL	21.97	30.99	34.11	24.55	16.27	**25.58**

SBL	27.59	48.98	63.04	43.70	20.19	**40.70**
HBL	18.57	28.69	31.56	28.43	25.66	**26.58**
NIC	30.81	39.56	49.86	40.46	18.25	**35.79**
NABIL	17.34	36.84	48.7	45.89	30.33	**35.82**

Standard Deviation $\delta = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$

	Bank				
	EBL	**SBL**	**HBL**	**NIC**	**NABIL**
S.D.(δ)	**6.37**	**15.29**	**4.42**	**10.64**	**11.31**

Coefficient of Variation (C.V.) = $\frac{\delta}{X} \times 100$

	Bank				
	EBL	**SBL**	**HBL**	**NIC**	**NABIL**
C.V.	**24.9**	**37.57**	**16.63**	**29.74**	**31.58**

APPENDIX – VI

Arithmetic Mean $\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots\ldots + X_n}{N} = \frac{\sum X}{N}$

BANK	**Year**					
	2006/07	**2007/08**	**2008/09**	**2009/10**	**2010/11**	$\frac{\sum X}{N}$
EBL	1.81	1.65	1.60	2.44	3.68	**2.24**
SBL	0	2.02	1.45	1.05	1.89	**1.28**
HBL	3.18	2.30	2.27	2.48	4.51	**2.95**
NIC	2.12	2.21	1.64	1.40	4.20	**2.31**

NABIL	3.79	2.77	1.90	1.74	2.95	**2.63**

Standard Deviation $\delta = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$

	Bank				
	EBL	**SBL**	**HBL**	**NIC**	**NABIL**
S.D.(δ)	**0.78**	**0.73**	**0.85**	**0.99**	**0.75**

Coefficient of Variation (C.V.) = $\frac{\delta}{\overline{X}} \times 100$

	Bank				
	EBL	**SBL**	**HBL**	**NIC**	**NABIL**
C.V.	**34.96**	**56.68**	**28.75**	**42.76**	**28.42**

APPENDIX – VII

Arithmetic Mean $\overline{X} = \frac{X_1 + X_2 + X_3 + ... + X_n}{N} = \frac{\sum X}{N}$

BANK	**Year**					
	2006/07	**2007/08**	**2008/09**	**2009/10**	**2010/11**	$\frac{\sum X}{N}$
EBL	217.67	280.62	321.77	345.23	331.99	**299.50**
SBL	120.63	132.28	130.39	134.29	146.44	**132.81**
HBL	228.72	264.74	247.95	256.52	226.79	**244.94**
NIC	116.13	139.17	138.09	145.58	134.57	**134.71**
NABIL	381	418	354	324	265	**348.40**

Standard Deviation $\delta = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$

	Bank				
	EBL	**SBL**	**HBL**	**NIC**	**NABIL**
S.D.(δ)	**46.23**	**8.28**	**15.02**	**9.95**	**51.94**

Coefficient of Variation (C.V.) = $\frac{\delta}{\overline{X}} \times 100$

	Bank				
	EBL	**SBL**	**HBL**	**NIC**	**NABIL**
C.V.	**15.44**	**6.23**	**6.13**	**7.38**	**14.91**

APPENDIX – VIII

1. MPS on DPS of EBL

X (DPS)	Y (MPS)	X^2	Y^2	XY	$(X- \overline{X})^2$
25	1379	625	1901641	34475	484
40	2430	1600	5904900	97200	49
50	3132	2500	9809424	156600	9
60	2455	3600	6027025	147300	169
60	1630	3600	2656900	97800	169
$\sum X$ = **235**	$\sum Y$ = **11026**	$\sum X^2$ = **11925**	$\sum Y^2$ = **26299890**	$\sum XY$ = **533375**	$\sum \left(X - \overline{X}\right)^2$ = **880**

$\overline{X} = \frac{\sum X}{n} = \frac{235}{5} =$ **47** $\qquad \overline{Y} = \frac{\sum Y}{n} = \frac{11026}{5} =$ 2205.20

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

$$r = \frac{5 \times 533375 - (235 \times 11026)}{\sqrt{5 \times 11925 - (235)^2}\ \sqrt{5 \times 26299890 - (11026)^2}}$$

r = **0.36**

Coefficient of Determination (r^2) = **0.13**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.39$

$=$ **0.26**

And $P.E.(r) \times 6 = 0.26 \times 6$

$= 1.57$

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 533375 - (235 \times 11026)}{5 \times 11925 - (235)^2} = \textbf{17.22}$$

$a = \overline{Y} - b\,\overline{X} = 2205.20 - (17.22 \times 47) = 1395.89$

Hence the required simple regression equation as follows:

Y= 1395.89 + (17.22 X)

Standard Error of Estimate (S.E.E.) $= \sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$$= \sqrt{\frac{26299890 - (1395.89 \times 11026) - [(17.22) \times 533375]}{5-2}}$$

$=$ **758.16**

Standard Error of Beta Coefficient (S_b) $= \frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$

$= \frac{758.16}{29.66} =$ **25.56**

T-value $|t| = \frac{b}{S_b} = \frac{17.22}{25.56} =$ **0.67**

2. MPS on EPS of EBL

X (EPS)	Y (MPS)	X^2	Y^2	XY	$(X-\bar{X})^2$
62.78	1379.00	3941.33	1901641.00	86573.62	569.01
78.42	2430.00	6149.70	5904900.00	190560.60	67.47
91.82	3132.00	8430.91	9809424.00	287580.24	26.89
99.99	2455.00	9998.00	6027025.00	245475.45	178.38
100.16	1630.00	10032.03	2656900.00	163260.80	182.95
$\sum X$ = **433.17**	$\sum Y$ = **11026**	$\sum X^2$ = **38551.96**	$\sum Y^2$ = **26299890**	$\sum XY$ = **973450.71**	$\sum(X-\bar{X})^2$ = **1024.71**

$$\bar{X} = \frac{\sum X}{n} = \frac{433.17}{5} = \mathbf{86.63} \qquad \bar{Y} = \frac{\sum Y}{n} = \frac{11026}{5} = 2205.20$$

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

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

r = **0.40**

Coefficient of Determination (r^2) = **0.16**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0.2533$

$=0.17$

And $P.E.(r) \times 6 = 0.2533 \times 6$

$=1.51$

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 973450.71 - (433.17 \times 11026)}{5 \times 38551.96 - (433.17)^2} = 17.78$$

a = $\overline{Y}$ - b $\overline{X}$ = 2205.2 – [(17.78) × 86.63] = 664.51

Hence the required simple regression equation as follows:

Y= -664.51 + (17.78 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{26299890 - (664.51 \times 11026) - [(17.78) \times 973450.71]}{5-2}}$

= **744.14**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum (X - \overline{X})^2}}$

$= \frac{744.14}{32.01}$ = **23.25**

T-value $|t| = \frac{b}{S_b}$ = $\frac{17.78}{23.25}$ = **0.76**

3. MPS on DPR of EBL

X (DPR)	**Y (MPS)**	**X^2**	**Y^2**	**XY**	**$(X- \overline{X})^2$**
39.82	1379.00	1585.76	1901641	54913.99	174.69
51.01	2430.00	2601.75	5904900	123947.97	4.13
54.45	3132.00	2965.28	9809424	170551.08	2.00
60.01	2455.00	3600.72	6027025	147314.73	48.54
59.90	1630.00	3588.51	2656900	97643.77	47.13
$\sum X$ = **265.19**	$\sum Y$ = **11026**	$\sum X^2$ = **14342.02**	$\sum Y^2$ = **26299890**	$\sum XY$ = **594371.54**	$\sum (X - \overline{X})^2$ = **276.50**

$\overline{X} = \frac{\sum X}{n} = \frac{265.19}{5} =$ **53.04** $\overline{Y} = \frac{\sum Y}{n} = \frac{11026}{5} =$ 2205.20

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

r = $\frac{5 \times 594371.54 - (265.19 \times 11026)}{\sqrt{5 \times 14342.02 - (265.19)^2}\ \sqrt{5 \times 26299890 - (11026)^2}}$

r = **0.41**

Coefficient of Determination (r^2) = **0.17**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0.3711$

$=$ **0.2503**

And $P.E.(r) \times 6 = 0.2503 \times 6$

$= 1.51$

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 594371.54 - (265.19 \times 11026)}{5 \times 14342.02 - (265.19)^2} = 34.60$

$a = \overline{Y} - b\,\overline{X} = 2205.20 - [(34.60) \times 53.04] = -370.08$

Hence the required simple regression equation as follows:

Y= 370.08 + (34.60X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{26299890 - (370.08 \times 11026) - [(34.60) \times 594371.54]}{5-2}}$

$=$ **742.60**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$

$= \frac{742.60}{16.63} =$ **44.65**

T-value $|t| = \frac{b}{S_b} = \frac{34.60}{44.65} =$ **0.77**

4. MPS on P/E Ratio of EBL

X (P/E)	Y (MPS)	X^2	Y^2	XY	$(X - \overline{X})^2$
21.97	1379.00	482.68	1901641	30296.63	13.02
30.99	2430.00	960.38	5904900	75305.70	29.29

34.11	3132.00	1163.49	9809424	106832.52	72.80
24.55	2455.00	602.70	6027025	60270.25	1.06
16.27	1630.00	264.71	2656900	26520.10	86.64
$\sum X$ = **127.89**	$\sum Y$ = **11026**	$\sum X^2$ = **3473.97**	$\sum Y^2$ = **26299890**	$\sum XY$ = **299225.20**	$\sum(X-\bar{X})^2$ = **202.80**

$\bar{X} = \frac{\sum X}{n} = \frac{127.89}{5} =$ **25.58** $\qquad \bar{Y} = \frac{\sum Y}{n} = \frac{11026}{5} =$ 2205.20

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

$$r = \frac{5 \times 299225.20 - (127.89 \times 11026)}{\sqrt{5 \times 3473.97 - (127.89)^2}\ \sqrt{5 \times 26299890 - (11026)^2}}$$

r = **0.86**

Coefficient of Determination (r^2) = **0.74**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0.1162$

$=$ **0.078**

And $P.E.(r) \times 6 = 0.078 \times 6$

$= 0.48$

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2} = \frac{5 \times 299225.20 - (127.89 \times 11026)}{5 \times 3473.97 - (127.89)^2} = 84.82$

$a = \bar{Y} - b\bar{X} = 2205.20 - [(84.82) \times 25.58] = 35.57$

Hence the required simple regression equation as follows:

Y= -35.57 + (84.82 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$$= \sqrt{\frac{26299890 - (35.57 \times 11026) - [(84.82) \times 299225.20]}{5-2}}$$

$$= \mathbf{418.81}$$

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum (X - \overline{X})^2}}$

$$= \frac{418.80}{14.24} = \mathbf{29.41}$$

T-value $|t| = \frac{b}{S_b} = \frac{84.82}{29.41} = \mathbf{2.88}$

5. MPS on DY of EBL

X (DY)	Y (MPS)	X^2	Y^2	XY	$(X- \overline{X})^2$
1.81	1379.00	3.29	1901641	2500	0.18
1.65	2430.00	2.71	5904900	4000	0.35
1.60	3132.00	2.55	9809424	5000	0.41
2.44	2455.00	5.97	6027025	6000	0.04
3.68	1630.00	13.55	2656900	6000	2.09
$\sum X$ = **11.18**	$\sum Y$ = **11026**	$\sum X^2$ = **28.07**	$\sum Y^2$ = **26299890**	$\sum XY$ = **23500**	$\sum (X - \overline{X})^2$ = **3.07**

$\overline{X} = \frac{\sum X}{n} = \frac{11.18}{5} =$ **2.24** $\overline{Y} = \frac{\sum Y}{n} = \frac{11026}{5} =$ 2205.2

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

$$r = \frac{5 \times 23500 - (11.18 \times 11026)}{\sqrt{5 \times 28.07 - (11.18)^2}\ \sqrt{5 \times 26299890 - (11026)^2}}$$

r = **-0.47**

Coefficient of Determination (r^2) = **0.22**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$$= 0.6745 \times 0.3488$$

$$= \mathbf{0.2352}$$

And $P.E.(r) \times 6 = 0.2352 \times 6$

$$= \mathbf{1.41}$$

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

b = $\frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 23500 - (11.18 \times 11026)}{5 \times 28.07 - (11.18)^2}$ = **-376.56**

a = $\overline{Y}$ - b $\overline{X}$ = 2205.20 – [(-376.56) × 2.24] = **3047.21**

Hence the required simple regression equation as follows:

Y= 3047.21+ (-376.56 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{26299890 - (3047.21 \times 11026) - [(-376.56) \times 23500]}{5-2}}$

= **718.89**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$

$= \frac{718.89}{1.75}$ = **410.79**

T-value $|t| = \frac{b}{S_b} = \frac{-376.56}{410.79}$ = **-0.92**

6. MPS on NWPS of EBL

X (NWPS)	Y (MPS)	X^2	Y^2	XY	$(X - \overline{X})^2$
217.67	1379.00	47380.23	1901641.00	300166.93	6695.49
280.82	2430.00	78859.87	5904900.00	682392.60	348.79
321.77	3132.00	103535.93	9809424.00	1007783.64	496.13
345.23	2455.00	119183.57	6027025.00	847538.98	2091.58
331.99	1630.00	110217.36	2656900.00	541143.70	1055.86
$\sum X$ = **1497.50**	$\sum Y$ = **11026**	$\sum X^2$ = **459176.96**	$\sum Y^2$ = **26299890**	$\sum XY$ = **3379025.85**	$\sum \left(X - \overline{X}\right)^2$ = **10687.85**

$\overline{X} = \frac{\sum X}{n} = \frac{1497.50}{5} =$ **299.50** $\overline{Y} = \frac{\sum Y}{n} = \frac{11026}{5} =$ **2205.20**

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

$$r = \frac{5 \times 3379025.85 - (1497.50 \times 11026)}{\sqrt{5 \times 459176.96 - (1497.50)^2}\ \sqrt{5 \times 26299890 - (11026)^2}}$$

r = **0.53**

Coefficient of Determination (r^2) = **0.28**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.3219$

= **0.2171**

And $P.E.(r) \times 6 = 0.0302 \times 6$

=**1.30**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

b = $\frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 3379025.85 - (1497.50 \times 11026)}{5 \times 459176.96 - (1497.50)^2}$ = **7.18**

a = $\overline{Y}$ - b $\overline{X}$ = 2205.20 – [(7.18) × 299.50] = **53.56**

Hence the required simple regression equation as follows:

Y= -53.56+ (7.18 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$ s

$$= \sqrt{\frac{26299890 - (53.56 \times 11026) - (7.18 \times 3379025.85)}{5-2}}$$

= **691.31**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum\left(X - \overline{X}\right)^2}}$

$= \frac{691.31}{103.38}$ = **6.69**

T-value $|t| = \frac{b}{S_b} = \frac{7.18}{6.69}$ = **1.07**

7. DPS on EPS of EBL

X (EPS)	Y (DPS)	X^2	Y^2	XY	$(X- \overline{X})^2$
62.78	25.00	3941.33	625.00	1569.50	569.01
78.42	40.00	6149.70	1600.00	3136.80	67.47
91.82	50.00	8430.91	2500.00	4591.00	26.89
99.99	60.00	9998.00	3600.00	5999.40	178.38
100.16	60.00	10032.03	3600.00	6009.60	182.95
$\sum X$ =**433.17**	$\sum Y$ =**235**	$\sum X^2$ =**38551.96**	$\sum Y^2$ =**11925**	$\sum XY$ = **21306.30**	$\sum(X-\overline{X})^2$ =**1024.71**

$\overline{X} = \frac{\sum X}{n} = \frac{433.17}{5} =$ **86.63** $\overline{Y} = \frac{\sum Y}{n} = \frac{235}{5} =$ **47**

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

$$r = \frac{5 \times 21306.30 - (433.17 \times 235)}{\sqrt{5 \times 38551.96 - (433.17)^2}\ \sqrt{5 \times 11925 - (235)^2}}$$

r = **0.9975**

Coefficient of Determination (r^2) = **0.995**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0..0023$

= **0.0.0015**

And $P.E.(r) \times 6 = 0.0015 \times 6$

=**0.01**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

b = $\frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2} = \frac{5 \times 21306.3 - (433.17 \times 235)}{5 \times 38551.96 - (433.17)^2}$ = **0.92**

a = $\overline{Y}$ - b $\overline{X}$ = $47 - (0.92 \times 86.63) = 33.08$

Hence the required simple regression equation as follows:

Y= 33.08 + (0.92 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{11925 - (-33.08 \times 235) - [(0.92) \times 21306.30]}{5-2}}$

= **1.19**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum (X - \overline{X})^2}}$

$= \frac{1.19}{32.01}$ = 0**.04**

T-value $|t| = \frac{b}{S_b}$ = $\frac{0..92}{0.04}$ = **24.87**

8. DPS on NWPS of EBL

X (NWPS)	**Y (DPS)**	**X^2**	**Y^2**	**XY**	**$(X- \overline{X})^2$**
217.67	25.00	47380.23	625.00	5441.75	6695.49
280.82	40.00	78859.87	1600.00	11232.80	348.79
321.77	50.00	103535.93	2500.00	16088.50	496.13
345.23	60.00	119183.57	3600.00	20713.78	2091.58
331.99	60.00	110217.36	3600.00	19919.40	1055.86
$\sum X$ = **1497.48**	$\sum Y$ = **235**	$\sum X^2$ = **459176.96**	$\sum Y^2$ = **11925**	$\sum XY$ = **73396.23**	$\sum (X - \overline{X})^2$ = **10687.85**

$\overline{X} = \frac{\sum X}{n} = \frac{1497.48}{5} =$ **299.50** $\overline{Y} = \frac{\sum Y}{n} = \frac{235}{5} =$ **47**

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

r = $\frac{5 \times 73396.23 - (1497.48 \times 235)}{\sqrt{5 \times 459176.96 - (1497.48)^2}\ \sqrt{5 \times 11925 - (235)^2}}$

r = **-0.98**

Coefficient of Determination (r^2) = **0.96**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.0178$

= **0.0206**

And $P.E.(r) \times 6 = 0.0206 \times 6$

$= 0.06$

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 73396.23 - (1497.48 \times 235)}{5 \times 459176.96 - (1497.48)^2} = \mathbf{0.28}$$

$a = \overline{Y} - b\,\overline{X} = 47 - (0.28 \times 299.50) = -37.47$

Hence the required simple regression equation as follows:

Y= -37.47 + (0.28 X)

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

$$= \sqrt{\frac{11925 - (-37.47 \times 235) - [(0.28) \times 73396.23]}{5-2}}$$

$$= \mathbf{3.14}$$

$$\text{Standard Error of Beta Coefficient } (S_b) = \frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$$

$$= \frac{3.14}{103.38} = \mathbf{0.03}$$

$$\text{T-value } |t| = \frac{b}{S_b} = \frac{0.28}{0.03} = \mathbf{9.33}$$

APPENDIX – IX

1. MPS on DPS of SBL

X (DPS)	Y (MPS)	X^2	Y^2	XY	$(X-\bar{X})^2$
0	360.00	0	129600	0.00	102.13
15.79	778.00	249.32	605284	12284.62	32.31
15.79	1089.00	249.32	1185921	17195.31	32.31
10.53	1000.00	110.88	1000000	10530.00	0.18
8.42	444.00	70.90	197136	3738.48	2.84
$\sum X$ = **50.53**	$\sum Y$ =**3671**	$\sum X^2$ = **680.43**	$\sum Y^2$ = **3117941**	$\sum XY$ = **43748.41**	$\sum(X-\bar{X})^2$ = **169.77**

$$\bar{X} = \frac{\sum X}{n} = \frac{50.53}{5} = \mathbf{10.11} \qquad \bar{Y} = \frac{\sum Y}{n} = \frac{3671}{5} = 734.20$$

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

$$r = \frac{5 \times 43748.41 - (50.53 \times 3671)}{\sqrt{5 \times 680.43 - (50.53)^2}\ \sqrt{5 \times 3117941 - (3671)^2}}$$

r = **0.78**

Coefficient of Determination (r^2) = **0.61**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0.1744$

$= \mathbf{0.1176}$

And $P.E.(r) \times 6 = 0.1176 \times 6$

$= \mathbf{0.69}$

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 43748.41 - (50.53 \times 3671)}{5 \times 680.43 - (50.53)^2} = \mathbf{39.17}$$

$a = \bar{Y} - b\,\bar{X} = 734.2 - (39.17 \times 10.11) = 338.38$

Hence the required simple regression equation as follows:

Y= 338.38 + (39.17 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{3117941 - (338.38 \times 3671) - [(39.17) \times 43748.41]}{5-2}}$

= **232.56**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum (X - \overline{X})^2}}$

$= \frac{232.56}{13.03}$ = **17.84**

T-value $|t| = \frac{b}{S_b}$ = $\frac{39.17}{17.84}$ = **2.19**

2. MPS on EPS of SBL

X (EPS)	**Y (MPS)**	**X^2**	**Y^2**	**XY**	**(X- $\overline{X}$)^2**
13.05	360.00	170.30	129600.00	4698.00	26.73
15.88	778.00	252.17	605284.00	12354.64	5.48
17.29	1090.00	298.94	1188100.00	18846.10	0.86
22.89	1000.00	523.95	1000000.00	22890.00	21.81
21.99	444.00	483.56	197136.00	9763.56	14.21
$\sum X$ =**91.10**	$\sum Y$ =**3672**	$\sum X^2$ = **1728.93**	$\sum Y^2$ = **3120120**	$\sum XY$ = **68552.30**	$\sum (X - \overline{X})^2$ = **69.09**

$\overline{X} = \frac{\sum X}{n} = \frac{91.10}{5} =$ **18.22** $\overline{Y} = \frac{\sum Y}{n} = \frac{3672}{5} =$ **734.4**

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

r = $\frac{5 \times 68552.30 - (91.10 \times 3672)}{\sqrt{5 \times 1728.93 - (91.10)^2}\ \sqrt{5 \times 3120120 - (3672)^2}}$

r = **0..30**

Coefficient of Determination (r^2) = **0.09**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.4069$

= **0.2744**

And $P.E.(r) \times 6 = 0.2774 \times 6$

=**1.64**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 68552.30 - (91.10 \times 3672)}{5 \times 1728.93 - (91.10)^2} = \mathbf{23.86}$$

$a = \overline{Y} - b\,\overline{X} = 734.4 - (23.86 \times 18.22) = 299.69$

Hence the required simple regression equation as follows:

Y= 299.69+ (23.86X)

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

$$= \sqrt{\frac{3120120 - (299.69 \times 3672) - [(23.86) \times 68552.30]}{5-2}}$$

$$= \mathbf{357.80}$$

$$\text{Standard Error of Beta Coefficient } (S_b) = \frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$$

$$= \frac{357.80}{8.31} = \mathbf{43.01}$$

$$\text{T-value } |t| = \frac{b}{S_b} = \frac{23.86}{43.01} = \mathbf{0.55}$$

3. DPS on EPS of SBL

X (EPS)	**Y (DPS)**	**X^2**	**Y^2**	**XY**	**$(X - \overline{X})^2$**
13.05	0	403.21	0.00	0.00	26.73
15.88	15.79	170.30	249.32	250.75	5.48
17.29	15.79	252.17	249.32	273.01	0.86
22.89	10.53	298.94	110.88	241.03	21.81
21.99	8.42	523.95	70.90	185.16	14.21
$\sum X$ = **91.10**	$\sum Y$ =**50.53**	$\sum X^2$ = **1728.93**	$\sum Y^2$ = **680.43**	$\sum XY$ = **949.94**	$\sum \left(X - \overline{X}\right)^2$ = **69.09**

$\overline{X} = \frac{\sum X}{n} = \frac{91.10}{5} =$ **18.22** $\overline{Y} = \frac{\sum Y}{n} = \frac{50.53}{5} =$ 10.11

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

$$r = \frac{5 \times 949.94 - (91.10 \times 50.53)}{\sqrt{5 \times 1728.93 - (91.10)^2}\ \sqrt{5 \times 680.43 - (50.53)^2}}$$

r = **0.27**

Coefficient of Determination (r^2) = **0.07**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.4158$

= **0.2804**

And $P.E.(r) \times 6 = 0.2804 \times 6$

=**1.64**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

b = $\frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 949.94 - (91.10 \times 50.53)}{5 \times 1728.93 - (91.10)^2}$ = **0.42**

a = $\overline{Y}$ - b $\overline{X}$ = 10.11 – [(0.42 × 18.22] = **2.38**

Hence the required simple regression equation as follows:

Y= 2.74 + (0.32X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$$= \sqrt{\frac{680.43 - (2.38 \times 50.53) - [(0.42) \times 949.94]}{5-2}}$$

= **7.24**

Standard Error of Beta Coefficient (S_b) = $\dfrac{S.E.E.}{\sqrt{\sum\left(X-\overline{X}\right)^2}}$

$= \dfrac{7.24}{8.31} = \mathbf{0.87}$

T-value $|t| = \dfrac{b}{S_b} = \dfrac{0.42}{0.87} = \mathbf{0.49}$

APPENDIX – X

1. MPS on DPS of HBL

X (DPS)	Y (MPS)	X^2	Y^2	XY	$(X-\bar{X})^2$
35	1100.00	1225.00	1210000	38500	25.8064
40	1740.00	1600.00	3027600	69600	0.0064
45	1980.00	2025.00	3920400	89100	24.2064
43.56	1760.00	1897.47	3097600	76665.6	12.1104
36.84	816.00	1357.19	665856	30061.44	10.4976
$\sum X$ = **200.4**	$\sum Y$ = **7396**	$\sum X^2$ = **8104.66**	$\sum Y^2$ = **11921456**	$\sum XY$ = **303927.04**	$\sum(X-\bar{X})^2$ = **72.63**

$$\bar{X} = \frac{\sum X}{n} = \frac{200.4}{5} = \mathbf{40.08} \qquad \bar{Y} = \frac{\sum Y}{n} = \frac{7396}{5} = \mathbf{1479.2}$$

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

$$r = \frac{5 \times 303927.04 - (200.4 \times 7396)}{\sqrt{5 \times 8104.66 - (200.4)^2}\ \sqrt{5 \times 11921456 - (7396)^2}}$$

r = **0.89**

Coefficient of Determination (r^2) = **0.79**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0.0939$

$=$ **0.0633**

And $P.E.(r) \times 6 = 0.0633 \times 6$

$=$**0.38**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 303927.04 - (200.4 \times 7396)}{5 \times 8104.66 - (200.4)^2} = \mathbf{103.20}$$

$a = \bar{Y} - b\bar{X} = 1479.20 - [(103.20) \times 40.08] =$ **-2657.18**

Hence the required simple regression equation as follows:

Y= --2657.18 + (103.20 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{11921456 - (-2657.185 \times 7396) - [(103.20) \times 303927.04]}{5-2}}$

= **263.15**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum (X - \overline{X})^2}}$

$= \frac{263.15}{8.52}$ = **30.89**

T-value $|t| = \frac{b}{S_b}$ = $\frac{103.20}{30.89}$ = **3.34**

2. MPS on EPS of HBL

X (EPS)	**Y (MPS)**	**X^2**	**Y^2**	**XY**	**$(X- \overline{X})^2$**
59.24	1100.00	3509.38	1210000.00	65164.00	15.78
60.66	1740.00	3679.64	3027600.00	105548.40	29.07
62.74	1980.00	3936.31	3920400.00	124225.20	55.83
61.90	1760.00	3831.61	3097600.00	108944.00	43.98
31.80	816.00	1011.24	665856.00	25948.80	550.75
$\sum X$ = **276.34**	$\sum Y$ = **7396**	$\sum X^2$ = **15968.17**	$\sum Y^2$ = **11921456**	$\sum XY$ = **429830.40**	$\sum (X - \overline{X})^2$ = **695.41**

$\overline{X} = \frac{\sum X}{n} = \frac{276.34}{5}$ = **55.27** $\overline{Y} = \frac{\sum Y}{n} = \frac{7396}{5}$ = **1479.20**

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

r = $\frac{5 \times 429830.40 - (276.34 \times 7396)}{\sqrt{5 \times 15968.17 - (276.34)^2}\ \sqrt{5 \times 11921456 - (7396)^2}}$

r = **0.81**

Coefficient of Determination (r^2) = **0.66**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.1520$

= **0.1026**

And $P.E.(r) \times 6 = 0.1026 \times 6$

= **0.63**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 429830.40 - (276.34 \times 7396)}{5 \times 15968.17 - (276.34)^2} = \mathbf{30.30}$$

$a = \overline{Y} - b\,\overline{X} = 1479.20 - [(30.30) \times 55.27] = -195.48$

Hence the required simple regression equation as follows:

Y= -195.48 + (30.30X)

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

$$= \sqrt{\frac{11921456 - (-195.48 \times 7396) - [(30.30) \times 429830.40]}{5-2}}$$

$$= \mathbf{338.14}$$

$$\text{Standard Error of Beta Coefficient } (S_b) = \frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$$

$$= \frac{338.14}{26.37} = \mathbf{12.82}$$

$$\text{T-value } |t| = \frac{b}{S_b} = \frac{30.30}{12.82} = \mathbf{2.36}$$

3. DPS on EPS of HBL

X (EPS)	**Y (DPS)**	**X^2**	**Y^2**	**XY**	**$(X- \overline{X})^2$**
59.24	35	3509.38	1225.00	2073.40	15.78
60.66	40	3679.64	1600.00	2426.40	29.07
62.74	45	3936.31	2025.00	2823.30	55.83
61.90	43.56	3831.61	1897.47	2696.36	43.98
31.80	36.84	1011.24	1357.19	1171.51	550.75
$\sum X =$ **276.34**	$\sum Y =$ **200.40**	$\sum X^2 =$ **15968.17**	$\sum Y^2 =$ **8104.66**	$\sum XY =$ **11190.98**	$\sum \left(X - \overline{X}\right)^2 =$ **695.41**

$\overline{X} = \frac{\sum X}{n} = \frac{276.34}{5} = \mathbf{55.27}$ $\overline{Y} = \frac{\sum Y}{n} = \frac{200.4}{5} = \mathbf{40.08}$

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

$$r = \frac{5 \times 11190.98 - (276.34 \times 200.4)}{\sqrt{5 \times 15968.17 - (276.34)^2}\ \sqrt{5 \times 8104.66 - (200.40)^2}}$$

r = **0.51**

Coefficient of Determination (r^2) = **0.26**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.3309$

$=$ **0.2232**

And $P.E.(r) \times 6 = 0.2232 \times 6$

$=$**1.33**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 11190.98 - (276.34 \times 200.4)}{5 \times 15968.17 - (276.34)^2} =$ **0.17**

$a = \overline{Y} - b\,\overline{X} = 40.08 - [(0.17) \times 55.27] =$ **30.92**

Hence the required simple regression equation as follows:

Y= 30.92 + (0.17X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$$= \sqrt{\frac{8104.66 - (30.92 \times 200.40) - [(0.17) \times 11190.98]}{5-2}}$$

$=$ **1.39**

Standard Error of Beta Coefficient (S_b) = $\dfrac{S.E.E.}{\sqrt{\sum\left(X-\overline{X}\right)^2}}$

$= \dfrac{1.39}{26.37} = \mathbf{0.05}$

T-value $|t| = \dfrac{b}{S_b} = \dfrac{0.17}{0.05} = \mathbf{3.14}$

APPENDIX – XI

1. MPS on DPS of NIC

X (DPS)	Y (MPS)	X^2	Y^2	XY	$(X-\bar{X})^2$
10.53	496.00	110.8809	246016	5222.88	70.86
21.05	950.00	443.1025	902500	19997.5	4.42
21.05	1284.00	443.1025	1648656	27028.2	4.42
15.79	1126.00	249.3241	1267876	17779.54	9.97
26.32	626.00	692.7424	391876	16476.32	54.35
$\sum X =$ **94.74**	$\sum Y =$ **4482**	$\sum X^2 =$ **1939.15**	$\sum Y^2 =$ **4456924**	$\sum XY =$ **86504.44**	$\sum (X-\bar{X})^2 =$ **144.02**

$$\bar{X} = \frac{\sum X}{n} = \frac{94.74}{5} = \mathbf{18.95} \qquad \bar{Y} = \frac{\sum Y}{n} = \frac{4482}{5} = \mathbf{896.40}$$

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

$$r = \frac{5 \times 86504.44 - (94.74 \times 4482)}{\sqrt{5 \times 1939.15 - (94.74)^2}\ \sqrt{5 \times 4456924 - (4482)^2}}$$

r = **-0.20**

Coefficient of Determination (r^2) = **0.04**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0.4293$

$=$ **0.2895**

And $P.E.(r) \times 6 = 0.2895 \times 6$

$=$**1.74**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 86504.44 - (94.74 \times 4482)}{5 \times 1939.15 - (94.74)^2} = \mathbf{10.97}$$

$a = \bar{Y} - b\bar{X} = 896.40 - [(10.97) \times 18.95] =$ **688.59**

Hence the required simple regression equation as follows:

Y= 688.97+ (10.96 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{4456924 - (688.59 \times 4482) - [(10.97) \times 86504.44]}{5-2}}$

= **375.03**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum (X - \overline{X})^2}}$

$= \frac{375.03}{12}$ = **31.25**

T-value $|t| = \frac{b}{S_b}$ = $\frac{10.97}{31.25}$ =**0.35**

2. MPS on EPS of NIC

X (EPS)	**Y (MPS)**	**X^2**	**Y^2**	**XY**	**$(X- \overline{X})^2$**
16.10	496.00	259.21	246016.00	7985.60	90.21
24.01	950.00	576.48	902500.00	22809.50	2.52
25.75	1284.00	663.06	1648656.00	33063.00	0.02
27.83	1126.00	774.51	1267876.00	31336.58	4.98
34.30	626.00	1176.49	391876.00	21471.80	75.72
$\sum X$ = **127.99**	$\sum Y$ =**4482**	$\sum X^2$ = **3449.75**	$\sum Y^2$ =**4456924**	$\sum XY$ = **116666.48**	$\sum (X - \overline{X})^2$ =**173.46**

$\overline{X} = \frac{\sum X}{n} = \frac{127.99}{5}$ = **25.60** $\overline{Y} = \frac{\sum Y}{n} = \frac{4482}{5}$ = **896.40**

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

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

r = **0.22**

Coefficient of Determination (r^2) = **0.05**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.4248$

= **0.2865**

And P.E.(r) $\times$ 6=0.2865 $\times$ 6

=**1.72**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

b = $\frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 116666.48 - (127.99 \times 4482)}{5 \times 3449.75 - (127.99)^2}$ = **11.16**

a = $\overline{Y}$ - b $\overline{X}$ =896.40 – [(11.16) $\times$ 25.60] = **610.65**

Hence the required simple regression equation as follows:

Y= 610.65+ (11.16 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

= $\sqrt{\frac{4456924 - (610.65 \times 4482) - [(11.16) \times 116666.48]}{5-2}}$

= **373.12**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$

= $\frac{373.12}{13.17}$ = **28.33**

T-value $|t| = \frac{b}{S_b}$ = $\frac{11.16}{28.33}$ = **0.39**

3. DPS on EPS of NIC

X (EPS)	**Y (DPS)**	**X^2**	**Y^2**	**XY**	**(X- $\overline{X}$)^2**
16.1	10.53	259.21	110.88	169.53	90.21
24.01	21.05	576.48	443.10	505.41	2.52
25.75	21.05	663.06	443.10	542.04	0.02
27.83	15.79	774.51	249.32	439.44	4.98
34.3	26.32	1176.49	692.74	902.78	75.72
$\sum X$ = **127.99**	$\sum Y$ =**94.74**	$\sum X^2$ = **3449.75**	$\sum Y^2$ =**1939.15**	$\sum XY$ = **2559.19**	$\sum \left(X - \overline{X}\right)^2$ =**173.46**

$\overline{X} = \frac{\sum X}{n} = \frac{127.99}{5} =$ **25.60** $\overline{Y} = \frac{\sum Y}{n} = \frac{94.74}{5} =$ **18.95**

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

$$r = \frac{5 \times 2559.19 - (127.99 \times 94.74)}{\sqrt{5 \times 3449.75 - (127.99)^2}\ \sqrt{5 \times 1939.15 - (94.74)^2}}$$

r = **0.85**

Coefficient of Determination (r^2) = **0.72**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.1252$

= **0.0845**

And $P.E.(r) \times 6 = 0.0845 \times 6$

=**0.51**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2} = \frac{5 \times 2559.19 - (127.99 \times 94.74)}{5 \times 3449.75 - (127.99)^2} =$ **0.77**

$a = \overline{Y} - b\,\overline{X} = 18.95 - [(0.77) \times 25.60] = -0.83$

Hence the required simple regression equation as follows:

Y= -0.83 + (0.77 X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$$= \sqrt{\frac{1939.15 - (-0.83 \times 94.74) - [(0.77) \times 2559.19]}{5-2}}$$

= **3.67**

Standard Error of Beta Coefficient (S_b) = $\dfrac{S.E.E.}{\sqrt{\sum\left(X-\overline{X}\right)^2}}$

$= \dfrac{3.67}{13.17}$ = **0.28**

T-value $|t| = \dfrac{b}{S_b}$ $= \dfrac{0.77}{0.28}$ = **2.77**

APPENDIX – XII

1. MPS on DPS of NABIL

X (DPS)	Y (MPS)	X^2	Y^2	XY	$(X-\overline{X})^2$
85	2240.00	7225	5017600	190400	121
140	5050.00	19600	25502500	707000	1936
100	5275.00	10000	27825625	527500	16
85	4899.00	7225	24000201	416415	121
70	2384.00	4900	5683456	166880	676
$\sum X$ = **480**	$\sum Y$ = **19848**	$\sum X^2$ = **48950**	$\sum Y^2$ = **88029382**	$\sum XY$ = **2008195**	$\sum(X-\overline{X})^2$ = **2870**

$\overline{X} = \frac{\sum X}{n} = \frac{480}{5} =$ **96** $\overline{Y} = \frac{\sum Y}{n} = \frac{19848}{5} =$ **3969.6**

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

$$r = \frac{5 \times 20008195 - (480 \times 19848)}{\sqrt{5 \times 48950 - (480)^2}\ \sqrt{5 \times 88029382 - (19848)^2}}$$

r = **0.63**

Coefficient of Determination (r^2) = **0.39**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0.2697$

= **0.1819**

And $P.E.(r) \times 6 = 0.1819 \times 6$

=**1.09**

Regression equation of Y on X, Y= a+ b X

Where, S

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2} = \frac{5 \times 2008195 - (480 \times 19848)}{5 \times 48950 - (480)^2} =$ **35.81**

$a = \overline{Y} - b\overline{X} = 3969.6 - [(35.81) \times 96] =$ **531.42**

Hence the required simple regression equation as follows:

Y= 531.42 + (35.81X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{88029382 - (531.42 \times 19848) - [(35.81) \times 2008195]}{5-2}}$

= **1361.31**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum (X - \overline{X})^2}}$

$= \frac{1361.31}{53.57}$ = **25.41**

T-value $|t| = \frac{b}{S_b}$ $= \frac{35.81}{25.41}$ = **1.40**

2. MPS on EPS of NABIL

X (EPS)	**Y (MPS)**	**X^2**	**Y^2**	**XY**	**$(X- \overline{X})^2$**
129.21	2240.00	16695.22	5017600.00	289430.40	296.39
137.08	5050.00	18790.93	25502500.00	692254.00	629.31
108.31	5275.00	11731.06	27825625.00	571335.25	13.57
106.76	4899.00	11397.70	24000201.00	523017.24	27.39
78.61	2384.00	6179.53	5683456.00	187406.24	1114.49
$\sum X$ = **559.97**	$\sum Y$ = **19848**	$\sum X^2$ = **64794.44**	$\sum Y^2$ = **88029382**	$\sum XY$ = **2263443.13**	$\sum (X - \overline{X})^2$ = **2081.16**

$\overline{X} = \frac{\sum X}{n} = \frac{559.97}{5}$ = **112.19** $\overline{Y} = \frac{\sum Y}{n} = \frac{19848}{5}$ = **3969.6**

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

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

r = **0.29**

Coefficient of Determination (r^2) = **0.085**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1 - r^2}{\sqrt{n}}$

$= 0.6745 \times 0.4092$

= **0.2760**

And P.E.(r) $\times$ 6=0.2760 $\times$ 6

=**1.65**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

b = $\frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - \left(\sum X\right)^2}$ = $\frac{5 \times 2263443.13 - (559.97 \times 19848)}{5 \times 64794.44 - (559.97)^2}$ = **19.50**

a = $\overline{Y}$ - b $\overline{X}$ = 3969.60– [(19.50) $\times$ 112.19] = **1781.69**

Hence the required simple regression equation as follows:

Y= 1781.69+ (19.50X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

= $\sqrt{\frac{88029382 - (1781.69 \times 19848) - [(19.50) \times 2263443.13]}{5-2}}$

= **1678.21**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$

= $\frac{1678.21}{45.62}$ = **36.78**

T-value $|t| = \frac{b}{S_b}$ = $\frac{19.50}{36.78}$ = **0.53**

3. DPS on EPS of NABIL

X (EPS)	**Y (DPS)**	**X^2**	**Y^2**	**XY**	**$(X- \overline{X})^2$**
129.21	85	16695.22	7225.00	10982.85	296.39
137.08	140	18790.93	19600.00	19191.20	629.31
108.31	100	11731.06	10000.00	10831.00	13.57

106.76	85	11397.70	7225.00	9074.60	27.39
78.61	70	6179.53	4900.00	5502.70	1114.49
$\sum X$ = **559.97**	$\sum Y$ = **480**	$\sum X^2$ = **64794.44**	$\sum Y^2$ = **48950**	$\sum XY$ = **55582.35**	$\sum (X-\bar{X})^2$ = **2081.16**

$\bar{X} = \frac{\sum X}{n} = \frac{559.97}{5} =$ **111.99** $\bar{Y} = \frac{\sum Y}{n} = \frac{480}{5} =$ **96**

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

$$r = \frac{5 \times 55582.35 - (559.97 \times 480)}{\sqrt{5 \times 64794.44 - (559.97)^2}\ \sqrt{5 \times 48950 - (480)^2}}$$

r = **0.75**

Coefficient of Determination (r^2) = **0.56**

Probable error of correlation coefficient, P.E. (r) = $0.6745 \times \frac{1-r^2}{\sqrt{n}}$

$= 0.6745 \times 0.1967$

= **0.1327**

And $P.E.(r) \times 6 = 0.1327 \times 6$

= **0.80**

Regression equation of Y on X, Y= a+ b X

Where,

a = regression constant

b = Regression coefficient (slope of the regression line)

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

$\sum Y = n.a + b\sum X$ And $\sum XY = a\sum X + b\sum X^2$

Solving two normal equations, we get

b = $\frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2} = \frac{5 \times 55582.35 - (559.97 \times 480)}{5 \times 64794.44 - (559.97)^2} =$ **0.88**

a = $\bar{Y}$ - b $\bar{X}$ = 96 – [(0.88) × 111.99] = **-2.22**

Hence the required simple regression equation as follows:

Y= -2.22 + (0.88X)

Standard Error of Estimate (S.E.E.) = $\sqrt{\frac{\sum Y^2 - a\sum Y - b\sum XY}{n-2}}$

$= \sqrt{\frac{48950 - (-2.22 \times 480) - [0.88 \times 55582.35]}{5-2}}$

$=$ **20.56**

Standard Error of Beta Coefficient (S_b) = $\frac{S.E.E.}{\sqrt{\sum \left(X - \overline{X}\right)^2}}$

$= \frac{20.56}{45.61}$ = **0.45**

T-value $|t| = \frac{b}{S_b} = \frac{0.88}{0.45}$ = **1.94**

APPENDIX – XIII

1. Correlation analysis

Correlation coefficient between financial variables of EBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.36	0.40	0.41	0.86	-0.47	0.53
DPS	1.00	1.00	0.99	-0.16	0.64	0.98
EPS		1.00	0.99	-0.12	0.61	0.99
P/E			-0.09	1.00	-0.83	0.02

Correlation coefficient between financial variables of SBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.78	0.30	0.70	0.90	0.32	0.01
DPS	1.00	0.27	0.98	0.77	0.80	0.35
EPS		1.00	0.07	-0.13	0.44	0.81
P/E			0.78	1.00	0.24	-0.27

Correlation coefficient between financial variables of HBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.43	0.50	-0.41	0.49	-0.62	0.45
DPS		0.51	-0.22	0.88	-0.69	0.68
EPS			-0.95	0.19	-0.95	0.64
P/E			0.10	1.00	-0.48	0.68

Correlation coefficient between financial variables of NIC

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.20	0.22	-0.83	0.83	-0.62	0.80
DPS		0.85	0.30	0.61	0.63	0.52
EPS			0.11	0.53	0.56	0.66
P/E			-0.40	1.00	-0.15	0.71

Correlation coefficient between financial variables of NABIL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.63	0.29	0.59	0.88	-0.81	0.38
DPS		0.75	0.64	0.24	-0.09	0.83
EPS			-0.03	-0.18	0.27	0.98
P/E			0.55	1.00	-0.98	-0.08

APPENDIX –XIV

Values of $PE(r) \times 6$ of EBL

	DPS	EPS	DPR	P/E	DY	NWPS

MPS	1.57	1.51	1.51	0.48	0.55	1.30
DPS	-	0.01	0.03	1.76	1.08	0.06
EPS	-	-	0.05	1.78	1.14	0.04
P/E	-	-	1.79	-	0.55	1.81

Values of $PE(r)\times 6$ of SBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.69	1.64	0.91	0.35	1.63	1.81
DPS	-	1.67	0.09	0.74	0.64	1.59
EPS	-	-	1.80	1.78	1.46	0.62
P/E	-	-	0.70	-	1.70	1.67

Values of $PE(r)\times 6$ of HBL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	1.48	1.36	1.51	1.37	1.11	1.45
DPS	-	1.33	1.72	0.40	0.95	0.97
EPS	-	-	0.18	1.74	0.18	1.06
P/E	-	-	1.79	-	1.40	0.98

Values of $PE(r)\times 6$ of NIC

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	0.20	0.22	-0.83	0.83	-0.62	0.80
DPS	-	0.85	0.30	0.61	0.63	0.52
EPS	-	-	0.11	0.53	0.56	0.66
P/E	-	-	-0.40	1.00	-0.15	0.71

Values of $PE(r)\times 6$ of NABIL

	DPS	EPS	DPR	P/E	DY	NWPS
MPS	1.09	1.65	1.19	0.40	0.61	1.54
DPS	-	0.80	1.06	1.70	1.79	0.56
EPS	-	-	1.81	1.75	1.68	0.07
P/E	-	-	1.26	-	0.07	1.79

APPENDIX – XV

2. Regression analysis

Regression analysis between MPS on EPS

Bank	Years	(a)	(b)	SEE	Sb	r^2	T-value
EBL	5	664.51	17.78	744.14	23.25	0.16	0.77
SBL	5	296.58	23.87	357.45	43.01	0.09	0.55
HBL	5	195.27	30.30	338.14	12.82	0.25	2.36
NIC	5	499.58	11.16	373.12	28.33	0.05	0.39
NABIL	5	1781.70	19.50	1678.22	36.79	0.09	0.53

Regression analysis between MPS on DPS

Bank	Years	(a)	(b)	SEE	Sb	r^2	T-value
EBL	5	1395.89	17.22	758.16	25.56	0.13	0.67
SBL	5	338.58	39.17	232.57	17.85	0.61	2.19
HBL	5	2657.18	103.20	263.15	30.89	0.18	3.34
NIC	5	688.59	10.97	375.03	31.25	0.04	0.35
NABIL	5	531.43	35.81	1361.31	25.41	0.40	1.41

Regression analysis between MPS on DPR

Bank	Years	(a)	(b)	SEE	Sb	R^2	T-value
EBL	5	370.08	34.60	742.60	44.65	0.17	0.77
SBL	5	424.87	5.69	266.74	3.32	0.49	1.71
HBL	5	2476.86	-13.03	461.14	10.25	0.17	1.27
NIC	5	1868.97	-17.39	212.54	6.71	0.69	2.59
NABIL	5	1610.09	65.17	1421.47	51.95	0.35	1.25

Regression analysis between MPS on P/E Ratio

Bank	Years	(a)	(b)	SEE	Sb	R^2	T-value
EBL	5	35.57	84.82	418.81	29.41	0.74	2.88
SBL	5	39.92	17.06	165.81	4.85	0.81	3.52
HBL	5	483.20	73.82	386.83	39.15	0.24	1.89
NIC	5	752.13	40.98	211.03	15.64	0.69	2.62
NABIL	5	166.88	106.16	822.16	32.50	0.77	3.27

Regression analysis between MPS on DY

Bank	Year	(a)	(b)	SEE	Sb	R^2	T-value
EBL	5	3047.21	-376.56	718.89	410.80	0.69	0.92
SBL	5	572.22	126.35	356.16	219.85	0.10	0.57
HBL	5	1819.50	-94.58	547.96	182.65	0.38	0.52
NIC	5	1326.08	-185.69	300.26	135.87	0.38	1.37
NABIL	5	7861.90	-1481.09	1021.23	611.51	0.66	2.42

Regression analysis between MPS on NWPS

Bank	Years	(a)	(b)	SEE	Sb	R^2	T-value

EBL	5	53.56	7.18	691.31	6.69	0.28	1.07
SBL	5	690.04	0.33	375.35	20.28	0.00	0.02
HBL	5	4626.57	24.93	305.82	9.11	0.20	2.74
NIC	5	2291.74	23.64	230.56	10.30	0.64	2.29
NABIL	5	465.18	10.06	1620.29	13.94	0.14	0.72

Regression analysis between DPS on EPS

Bank	Years	(a)	(b)	SEE	Sb	R^2	T-value
EBL	5	33.08	0.92	1.19	0.04	1.00	24.87
SBL	5	2.38	0.42	7.24	0.87	0.07	0.49
HBL	5	30.92	0.17	4.22	0.16	0.26	1.03
NIC	5	0.83	0.77	3.67	0.28	0.72	2.77
NABIL	5	2.22	0.88	20.57	0.45	0.56	1.95

Regression analysis between DPS on NWPS

Bank	Years	(a)	(b)	SEE	Sb	R^2	T-value
EBL	5	37.48	0.28	3.14	0.03	0.96	9.27
SBL	5	22.46	0.25	7.05	0.38	0.12	0.64
HBL	5	2.22	0.17	3.61	0.11	0.46	1.61
NIC	5	18.55	0.28	5.92	0.26	0.27	1.05
NABIL	5	37.35	0.38	17.26	0.15	0.69	2.58