CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Nepal is the landlocked country characterized by the high population growth rate and low per capital income and low rate of capital formation as well as diverse on culture, economic, religion etc. As we know Nepal is very beautiful country with area of 1, 47,181 square kilometer. Majority of population are under the line of poverty. Agriculture is the backbone of Nepalese economic but non-agriculture sector has also shown their significant contribution in the national economic. But Nepal has been facing a lot of problem which are the main cause of underdeveloped country like political instability, lack of skilled manpower, poor resources mobilization, lack of capital etc.

Nepal is depended in foreign aid too. Dependency upon foreign aid is dramatically inclining in each year. So far as the economic aspect of Nepal is concerned , it is now forcing rapidly to economic reforms through settlement of different acts, provisions, and inviting largely the foreign investment coincide with private participation within the country in 2046 B.S. Country is having unequal distribution of national income. Population is increasing in geometric progression whereas as corns and physical amenities are increasing in arithmetic progression.

After the liberalization economic policy taken by the government of Nepal the rapid growth commercial banks of the country has become more competitive, dynamic and diversified. Joint Venture commercial banks are also decreasing. The history of capital market in Nepal is very new and concept of capital market was developed by the establishment of security exchange center on 2033 B.S. which was later on renamed as Nepal Stock Exchange (NEPSE) limited. The number of listed company and their trading was very negligible until the government of Nepal has made economic reforms along with broad financial policy in 2049 B.S. As the government of Nepal followed a broad financial policy in the process of economic liberalization, the privatization of public enterprises started taking place in the country. Various financial and insurance banks in the private sector began establishing with local and foreign investment. Due to increase in joint venture commercial banks they have high competition and are functioning at a great complex situation. To face the competition and for the

better performance they are giving more facilities to their customer and are also adopting the advance technology to operate their work effectively.

Financial management is basically concerned with making financial decision so as to achieve the objective of maximize the value of the firms to it's shareholder. Financial decisions are mainly involve investment financial and divided decision. Dividend decision is to determine the amount of earning to be distributed to shareholder as dividend and the amount to be retained in the firm. Retained earning are the must significant internal sources of financing the growth of the firm. On the other hand, dividends are desirable from shareholder point of view, as it trends to increase their current wealth. The objective of the dividend policy should be to maximize the shareholders returns so the value of their investment is maximized.

Dividend returns to the portion of net earning which are paid out to shareholder instead of paying dividend to the shareholders, the concern firm may retain the earning to other growth opportunity. Such action is indirectly beneficial to the shareholder through future increase in share price, in short, capital gain mean increase in the price of stock. Dividend policy adopted by a firm is an indicator of how is net income to cash dividend and retaining earning in order to maximize the value of the firm. It's also providing information to shareholder about management's forecast of future earning. The price of share is highly influenced by the corporation's dividend policy and the dividend decision itself is also affected by other financial variable as well.

1.2 Brief Profile of the Sample Banks:

This research is concerned with comparative study of "A" class commercial banks of Nepal. So the sample banks are briefly introduced below:

a. Standard Chartered Bank Limited

Standard Chartered Bank Limited has been operation in Nepal since 1987.The bank is an integral part of Standard Chartered group having a ownership of 75% and the balance owned by the Nepalese public. The bank is one of the largest international banks currently operating in Nepal standard chartered bank has a history of over 150 years in banking and operates in many of the world's fastest growing markets in over 70 countries. As mentioned in NEPSE Annual Reports it's main objective is to provide modern banking facilities like tell banking, SMS banking, ABBS service, ATM etc to the businessman, industrialists and other professionals

and to provide loans on commerce and industrial sector. In this year the net profit after tax is Rs. 818.92 million. It's Authorized capital is Rs 1000000000 issued capital is Rs 1000000000 and paid up capital is Rs 620784000.

b. Himalayan Bank Limited

Himalayan Bank limited was established in 1992 by the distinguished business personalities of Nepal in partnership with employees provided Nabil bank limited one of the largest commercial bank of Pakistan. It is the first commercial bank of Nepal with maximum shareholding by Nepalese Private Sector. Himalayan bank's policy is to extend quality and personalized service to it's customer's as promptly as possible. To extend more efficient services to it's customer. Himalayan bank limited has been adopting innovative and latest banking technology. To ensures the customers optimally enjoy modern banking system. It has providing technology driven services such as interest banking and SMS banking. Himalayan bank limited has been a pioneer in introducing a Nepalese domestic credit card "Himalayan Bank Credit Card" valid in Nepal and also a member of VISA & Master Card for international. The bank provides Home loan, Automobile loan, Subidha Loan or Hassle fee loan to customer to finance their social and education requirements. In current year, the net profit assets tax of bank is Rs. 11502 millions. It's current Authorized capita is Rs 2000000000 and issued capital is Rs. 1216220000.

c. Bank of Kathmandu Limited

Bank of Kathmandu limited has started it's operation in March 1995 with the objective to stimulates the Nepalese economics and take it to newer height. Bank of Kathmandu limited as become a prominent in the Nepalese banking sector. It is committed to delivering quality service to customers, generating good return to shareholders, providing attractive incentives to employees and serving the community through stronger corporate social responsibility endeavor. Bank of Kathmandu limited has also aims to facilitable the nation's economy and become more competitive globally. To active these, Bank of Kathmandu has been focusing on its set objectives right from the beginning. It has to day become a land more in the Nepalese banking sector by being among the few commercial banks which is entirely manage by Nepalese professionals and owned by the general public. This year i.e. 2009/10 profit after of bank is Rs 120.32 million. It's current authorized capital is Rs 1000000000 issued capital is Rs 844400000 and paid up capital is Rs 8444000000.

1.3 Focus of the study

The study is focused on the dividend policy of the commercial bank on the base of the data available. Dividend refers to that portion of earning of a firm that distribute to the shareholder's in return to their investment in the share. "By a dividend we mean some kind of consistent approached to the distribution versus retention decision rather making the decision on the purely adhoc basis from period" [Hunt, Pearson and Charles:1972:405] Dividend behavior may be defined as the way of acting of corporation with regard to providing returns to the investors in return to their investment in the shares. It is an important decision of financial management. Any change in divided policy has both favorable and unfavorable effects on the firm's stock price. Higher the dividend means higher the immediate cash flows to investor, which is good but lower future growth, which are bad. The dividend policy should be optimal which balances the opposing force and maximize stock prize.

Investors are investing their funds in the shares .This trend plays a significant role for the development and expansion of the capital market and it will continue only when dividend patterns is directly to the interest of shareholders. Recently joint venture banks and some others public limited companies have shown new trend of paying dividend to shareholders. There is also growing practice of paying bonus share, among some corporations of Nepal. An alternative from of dividend is share repurchase. If a firm has excess cash and insufficient profitable investment opportunity to justify the use of these funds. It is the shareholder's interest to distribute the funds. The distribution can be accomplished either by the repurchase of share or by paying the funds out in increased dividend.

1.4 Statement of the Problem

Dividend decision is a very important part of managerial finance in the sense that investors may require to rethink about investing in the shares of a company in absence of dividend payment. There is different school of thoughts on dividend policy in the theoretical literature of finance. One schools of though hold that capital gain, many theories are empirical findings. Dividend policy is still a crucial and probably a must controversial topic in finance. It is more technical area of finance in the sense that it is complex one having numerous implications for the firm.

After restoration of democracy, so many finance companies and few number of banking organization were established. In Nepal the there are 125 public

limited companies in different sector, which are listed in Nepal Stock Exchange ltd. As compared to other sector, this financial sector is paying dividend. Mainly a few number of commercial banks earns good net income and are also paying attractive dividend ,to its shareholders. These banks pay out ratio in relation to previous years are net consistent .Sometimes ,they pay high dividend which earning while earning is not high but sometime they pay low dividend even earning is high. So this study will attempt to know whether the banks are directed by prevailing policy or not. Mainly this research focuses on the following problems which are being faced by the dividend policy makers of any company.

a. What is trend of dividend policy in Nepalese Commercial banks?
b. Are all the commercial banks are adopting the same dividend policy?
c. Among the selected banks whose dividend policy is better?
d. What is the impact of dividend policy on stock price in Nepal?
e. What is the relationship between DPS with EPS and MPS in the commercial banks?
f. Whether commercial banks are guided by any specific dividend policy or not?

1.5 Objectives of the study

For the management of any organization, examination of the relationship between dividend and stock price may become an important guideline in setting suitable dividend policy. The main objectives of this study are to analyze the effect of dividend policy adopted by commercial banks, on its market price of the stock, as well as the overall value of commercial banks. The other specific objectives of the studies are as follows:

a. To compare the various aspects of dividend policy of selected commercial banks
b. To examine the impact of dividend policy on stock price (MPS)
c. To examine if there is any uniformity (Consistency) among EPS, DPS, MPS, DPR, P/E ratio and dividend yield.
d. To find the relation between EPS and DPS, EPS and MPS & DPS and MPS.
e. To point out the suitable suggestion based on the finding for the future improvement.

1.6 Significance of the study

Dividend Policy of Nepalese company is important now a day because it is getting considerable attention in financial management. Dividend pattern of the companies determines and analysis the division of earning between payment to stockholders and reinvestment in the firm .The study mainly analysis the factor that influences the allocation of earning to dividends or retained earning in Nepalese commercial banks. It also discusses the relationship between dividend payments and share prices, earning and dividends payment and market price and earning. From the study of this topic, it will advantageous to the following parties.

a. To the management:

Dividend policy is the controversial topic of financial management. It may affect the value of firms. Moreover most common objectives of the firm is to maximize shareholder's wealth. So management may adopt appropriate dividend policy. It provides important guidelines to the management in setting suitable dividend policy in their respective corporations.

b. To the shareholders:

Shareholders are more concerned with the amount of dividend paid by firm. So they have more curiosity on the dividend policy adopted by their concerned bank with this study they can make their mind more comparable in terms of dividend pattern and value of firm.

c. To the investors:

Generally most of the investors prefer to invest in profitable firm and expect high return. Corporate sector is expending but there is information gap between the management of Nepalese companies and Nepalese investors who are eager to invest in share. They are just investing in the shares in trile and error method. So the dividend behavior should be effective to attract new investor keeping the previous satisfied and should maintain the reputation of the firm.

d. To the research

First of all, it self importance to researcher for the fulfillment of Master of Business Studies (MBS). It also hoped that it will provide relevant and pertinent literature for future research on the area of dividend policy of managerial finance. It may be also importance to others who desirous to conduct study in similar topic.

Thus the study of "A Comparative Analysis on Dividend Policy of Nepalese Commercial Banks" may be very respectful and rewarding.

1.7 Limitation of the study

Each and every research has it's own limitation. Likewise, this research has some limitations. No one can be free from constants. The research will be done for the partial fulfillment of Master of Business Studies (MBS). The time is not enough and this study might not fully reliable because of the lack of researcher experience. Therefore, the following are the main limitation of the study.

a. The study is based on the secondary data.
b. Due to time constraints, not all the related area are possible to cover in depth.
c. Data are not available easily and data which are available on the websites are assumed correct and true
d. Only three selected commercial banks are taken for research.
e. The study covers only five year period i.e. 2005/2006, 2006/2007, 2007/2008, 2008/2009 and 2009/2010.

1.8 Organization of the study

This study has been organized in five chapters; each chapter deals some important factor of dividend policy payment pattern of Nepalese commercial banks. The titles of each of these chapters are listed below:

Chapter I : Introduction
Chapter II : Review of literature
Chapter III : Research Methodology
Chapter IV : Presentation and Analysis of data
Chapter V : Summary, Conclusion and Recommendation

Chapter I:

This is introduction chapter of the study. As already mentioned, this chapter describes the major issues to be investigated with Background of the study, Brief Profile of the Sample banks, Focus of the Study, Statement of the problem, Objectives of the study, significance of the study, limitation of the study and organization of the study

Chapter II:
This chapter describes theoretical and brief review of related and pertinent literature available. It includes a discussion on the conceptual framework: Major forms of dividend, payment procedure of dividend, dividend payout schemes, factor influencing dividend policy and legal provision regarding dividend practice in Nepal. Similarly review of major international studies review of major studies in Nepal and review of previous master's thesis.

Chapter III:
This chapter contains the research methodology. This chapter deals with introduction, research design, population and sample, nature and sources of data, data processing procedure and data analysis tools: statistical tools.

Chapter IV:
This chapter deals with the presentation and analysis of data financial and statistical tools. It also includes the major findings of the study. This is most important chapter of the study.

Chapter V:
This chapter includes summary, conclusion and recommendation. It states suggestive framework of the study. The bibliography and appendices are also included in the end of the study.

CHAPTER-II

REVIEW OF LITERATURE

2.1 Conceptual Framework

The third major decision of the firm is its dividend policy. The percentage of earning it pays in cash to its shareholders. “Dividend Payout of course, reduces the amount of earning’s retained in the firm and affects the total amount of internal financing”. [Van Horn: 1996:317]. The important aspect of dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained in the firm. Retained earnings are the most significant internal sources of financing the growth of the firm. On another hand, dividends are desirable from shareholder’s point of view, as it tend to increase their current wealth.

Those earnings, which are distributed to shareholders, are called dividend. The percentage of earning paid as dividend is payout ratio. A high payout ratio means more dividend and fewer funds for expansion and growth. A low payout on the other hand, results into more growth payout ratio, which is dividends as a percentage of earning is an important concept in context of the dividend policy. 100 percentages minus payout percentage is called retention ratio. Since dividend policy affects the financial structure, the flow of funds, corporate liquidity and investor’s attitudes. It is related to overall financing decision as dividend payout reduces the amount of retained earnings in the firm and affects the total amount of internal financing. Dividend refers to the portion of firm’s earnings that are paid out to shareholder in return to their investment. The firm has to choose between distributing the profit to shareholders and plugging them back into business .The choice would be obviously hang on the effect of decision on the maximization of shareholder’s wealth. The optimum dividend policy is one, which maximizes the market value of shareholder’s wealth. Shareholder’s wealth can be maximizing either through dividend or through capital gain. When a company pays dividends, stockholders are benefited directly. If the firm retains the earnings to exploit growth opportunities, shareholder can expect to be benefited indirectly through increase in the price of their share. In other words, it is wise dividend decision which maintains a balance between shareholders’s interest with that of corporate growth from internally generates funds. The funds that couldn’t be use to lack of beneficial

investment opportunities should be better paid as dividends. Since shareholder's have investment opportunities to employees else-where.

Dividend behavior is pattern of dividend payment to stockholders for their investment in different years. It analyses fluctuation of dividend payment in different year. Dividend behavior means distributed cash. Dividend to stockholder in some stability of dividends, i.e. constant dividend per share, constant payout ratio and low square plus extra. It shows the trend of dividend paid in a company in different years. Corporate dividend behavior may be defined as the way of functioning of corporations with regards to providing return to their investment in shares. Corporate sector is highly important for all round development of Nepal. It is in the sense that it is a lending sector in the economy, the development of which would automatically lead to the development sectors. It helps to mobilize domestic resources for the fulfillment of national economy. Liquidity in the securities is the important requisite to the development of stock market which in turn help to the development of corporate sector. Dividend is such price sensitive factors that have direct influence in liquidity. It also helps to boost investor's confidence by fulfilling their expectations of return on the investment in the shares. Hence, corporate dividend behavior would be an important study for the development of corporate factor in Nepal.

2.1.1 Major forms of Dividend

The firms can give various types of dividend on the shareholder's in the view of the objectives and policies, which they implement. It is not necessary that the firm always pay the dividend in the form of cash. "The type of dividend that corporations follows is partly matter of attitude of directors and partly a matter of a various circumstances and financial constraints the bound corporate plans and policies" [Shrestha :1980:670]. The dividend may be paid in various forms. Some of major types of dividend are as follows:

a. Cash Dividend

Most firms pay dividend in cash. The portion of earning paid in the form of cash to investors in proportion to their share holding is known as cash dividend. When cash dividend is paid, both the total assets and net worth of the firm decreases and the market price of the share drops in most cases by amount of the cash dividend paid. For the payment of cash dividend, firms should have adequate balance of cash. In Nepal, cash dividend is the most popular form of dividend and mostly adopted by many firms.

b. Stock Dividend

A stock dividend is simple the payment of dividend in the form of stock. It is additional share distributed to stockholder's. It represents nothing more than a recapitalization of the company, a stockholders proportional ownership remains unchanged. It is actually the payment of existing owners of the dividend in the form of stock, although stock dividends don't have a real value. Firms pay stock dividends as a replacement for supplement of cash dividend.

c. Script Dividend

The company uses this types of dividend when it has been suffering from cash problem but has earned profit. In such a situation, the dividend is paid in the form of promissory notes, which is called script dividend. Shareholders are provided with promissory notes with specified dates. The promissory note may be interest bearing or not. This term of dividend is very helpful for the company when there is lack of cash in the company.

d. Property Dividend

Property dividend is also known by the name of liquidating dividend. It involves a payment of assets property in any form other than cash .Such form of dividend may be followed whenever 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 he has been paid as property dividend.

e. Bond Dividend

Under this form of dividend, shareholder get bond instead of cash dividend. Bond dividend helps to postpone the payment of cash. These are given when the firms are unable to take the burden of interest of loan. The main advantage of the bond dividend that it has a favorable psychological impact on shareholders. The disadvantage of bond dividend is that from the company's view point of view they are more costly to administer than cash dividend.

f. Interim Dividend

Generally dividends are declared in the end of the financial year. This is called regular dividend but when management declares dividend before the end of financial year, it is called interim dividend.

g. Optional Dividend

The optional dividend is in fact, not a kind of dividend but simply a choice of dividend given to 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 cash, the cash option may be a convenience to the small shareholder who then avoids the cash and expenses of selling either hold or fraction of shares he does not wise to keep". [Warring :1931:404]

2.1.2 Payment Procedure of Dividend

Management should maintain regular dividend. For regular dividend, the firm will have sufficient earnings. Management will set a lower regular dividend rate than firms with the same average earning but less volatility. Management may also declared extra dividend in years when earnings are high and funds are available. Firms usually pay dividend on a quarterly basis in accordance with the following payment procedures:

a. Declaration data:

Declaration date is the date on which directors of the company declares the dividend. In case of Nepal, declaration date is the date on which general annual meeting held. But it is not certain that the date of Annual General Meeting dividend is declared. The company might not declare the dividend. On declaration date, amount of dividend per share, holders of record date and payment date are mentioned. After the declaration of dividends, total amount of dividend is transferred to dividend payable account from retained earnings account.

b. Holder-of- record data:

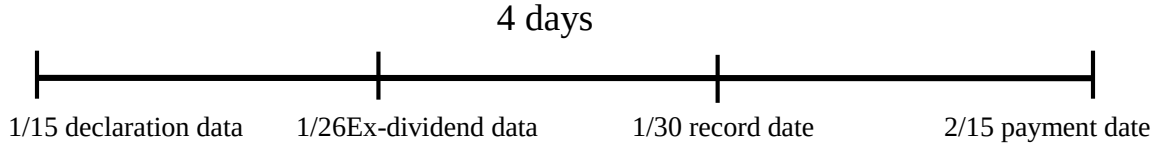
It is the dater after which new owners of shares may not qualify to receive dividends. In other words, company makes list of shareholders as a owners an that dates only those shareholders get dividends who are listed. Therefore, it is threshold date which obtained ownership is not able to get dividend.

c. Ex-Dividend Data:

There are so many brokers in the market. No one can exchange stock directly. Exchange of stock through brokers is necessary. The association of share brokers set a time, which is four-business day before the holders of record date. After that holder not able to receive the dividend called ex-dividend date.

d. Payment Date:

The company declares the date on which it pays dividend to its shareholders is called payment date.



2.1.3 Dividend payout Schemes

Stability or regulating of dividend is considered as a desirable policy by the management of companies. Most of the shareholder also prefer stable dividends because all other things being the same, stable dividend have a positive impact on the market price of the share. By stability, we mean maintaining its position in relation to a trend live preferably one that is upward sloping. Three of the commonly used dividend policy are as follows:

a. Constant dividend Per share

Constant dividend policy is based on the payment of fixed rupee dividend in each period. A number of companies follow the policy of paying fixed amount per share as dividend every period, without considering the fluctuation in the earnings of the company .This policy does not imply that the dividend per share or dividend rate will never be increased .When the company reaches new level of earning and expects to maintain it the annual dividend per share may be increased. Investors who have dividend as the only sources of their income prefer the constant dividend policy.

b. Constant Payout Ratio

The ratio of dividend to earning is known as payout ratio. When fixed percentage of earning is paid as divided in every period, the policy is called constant payout ratio. Since earnings fluctuate, following this policy necessarily means that the rupee amount of dividends will fluctuate. It ensures that dividends are paid when profits are earned, and avoided when it incurs losses.

c. Low Regular Dividends Plus Extras

This policy of paying a low regular dividend plus extra is a compromise between a stable dividend (stable growth rate) and a constant payout rate. Such a policy gives the firm flexibility, yet investors can count on receiving at least a minimum dividend. It is often followed by firms with relatively volatile earnings from year to year. The low regular dividend can be usually

be maintained even earnings decline and extra dividend can be paid when excess funds are available.

2.1.4 Factor Influencing Dividend policy

There are various factors that influence dividend policy. Some factors favor high payout ratio whereas some factor favors low payout ratio. Some factors have positive impact on dividend policy and some have negative impact. Therefore while making a dividend decision, many factor are to be considered. The various factors affecting dividend policy are as follows:

a. Legal Rule:

Dividend policy should be formulated within the boundary of some legal rules. There are three basis rules, which the company should follows. They are as follows:

- Net Profit Rule: According to this rule, dividend should be paid from the profit of the company and not more than the sum of total earnings of present year balance of the retained earnings of the past years.

- Insolvency Rule: According to this rule the company should pay the dividend to shareholders when the company is in bankruptcy position with liabilities exceeding the assets.

- Capital Impairment Rule: According to this rule, the dividend should not paid from paid up capital, which causes adverse effect in the creditors. A company pays dividend out of cash while incurring a corresponding reduction in the earnings account.

b. Liquidity Position:

The cash or liquidity Position of the firm influences its ability to pay dividends. A firm may have sufficient retained earnings but if they are invested in fixed assets cash may not be available to make dividend payment. Thus even a firm has a record of earning, it may not be able to pay cash dividend because liquidity position. Therefore, the firm must have adequate cash available on as well as retained earnings to pay dividends.

c. Stability of Earnings:

The firm, which has stable earning, is able to pay higher rate of dividend then those firms, which do not have stable earnings. The firm with stable has approximately the same earning the next years too. So, they can have high

payout ratio. But other firms are not able to predict the next year's earning. So they prefer to have low payout ratio and retain more amount for coming year.

d. Inflection

This is another constraint for dividend payment cost of replacing assets increases substantially due to inflation and the funds generated by depreciation would be inadequate to replace the assets. So, the greater profit retention may be required for the companies in order to make replacement or to maintain the capital in fact, which reduce dividend payment.

e. Control:

When the company pay high dividend then the new share have to be issued to raise fund for investment. By doing this the dominant groups of shareholder are unable to maintain their control over the company. In such a situation the company is retained rather paying the dividends.

f. Tax Position of Shareholders:

The tax position of shareholder's also affects dividend policy. Corporations owned by large tax payer's in high income tax brackets tend toward lower dividend payout whereas corporations owned by small investors towards higher dividend payout.

g. Profit Rate:

The rate of return on assets determines the relative attractiveness of payout earnings in the form of dividend to the stock holder on retains in the firm. Thus, the higher the profit of the company higher would be dividends to the shareholders.

h. Access to the capital market:

A large well established firm with a record of profitability and stability of earnings has easy access to capital markets and other forms of external financing. A small new or venture some firm however is riskier for potential investors. It's ability to raise equity or debt funds from capital market is restricted and it must return more earnings to finance its operations. A well established firm is thus likely to have a higher dividend payout rate than is new or small firm.

i. Rate of assets expansion:

When the firm is growing very rapidly, there is need of expansion of fixed assets for which fund are required. In such a case, the firm prefers to retain earnings rather than paying the dividend. So we can say that the growing firm need large amount of fund for which the money is retained rather than paying the dividend. So growth firm have low payout ratio.

j. Investment Opportunities:

Dividend policy is greatly influenced by the financial need of the company. A growing firm gives precedence to the retention of earning over the payment of dividends in order to finance its expanding activities. Thus investment opportunities of firm also influence dividend policy.

2.1.5 Legal Provision Regarding Dividend Practices in Nepal

There is a nothing started regarding rule of dividend practices in "Nepal Company Act 2010". The responsibility to protect shareholder interest is handed to protect shareholder's interest, because the attitude of board of directors play dominant role in the management of public limited companies and they are generally in majority who are nominated by government. At the present situation, it is advisable to enact a separate shareholders protection act and safeguard shareholders right and interest. Shareholders association of Nepal has been established for this purpose. The responsibilities to undertaken required action to protect shareholders interest was given to stock exchange centre by security exchange act 1983-84.

In Nepal, the Nepal Company Act 2053 makes some legal provisions for dividend payment. Those provisions are as under:

Section 2(m): States that bonus share (stock dividend) mean share issued in the firm of additional to shareholders by capitalizing the surplus from the profit or the reserve fund of the company. The term also denotes as increase in the paid up value of the share after capitalizing surplus and reserve funds.

Section (47): has prohibited company from purchasing its own shares. This section states that, no company shall purchases its own share or supply loans against the securities of its own shares.

Section (137): bonus shares and sub- section1 states that the company must inform the office issuing bonus share. Under sub- section 1 this may be done only according to special resolution passed by the general meeting.

Section 140- Dividend and Sub- Section of this section are as follows:
Sub-Section (1) expect in the following circumstances dividend shall be distributed among the shareholders with in 45 days from the date of decision to distribute them.

- In case any low forbids the distribution dividend
- In case the right to dividend is disputed
- In case dividend cannot be distributed with in the time limit

Mentioned above owing to circumstance beyond any one's controls without any fault on the part of the company.

Sub-Section (20 in case dividend are not distributed within the time limit mentioned in sub-section (1) this shall be done by adding interest of the prescribed rate.

Sub- Section (3) only the persons where name stands registered in the existing shareholders at the time of declaring the dividend shall be initiated to it

2.2 Review of Major International Studies

Various studies have been made concerning the dividends and stock price. Some of the major international studies on subject relating to dividends are stated as below.

2.2.1 Modigliani And Miller's Study

Modigliani and Miller's theory is also known as irrelevant theory of dividend policy. In the history of finance, for the first time, in 1996 through journal of business topic "Dividend Policy, growth and valuation of share", Modigliani and Miller advocated that the dividend policy has no effect on the share price of the firm. They concluded the value of firms depends on the firm's earnings, which depends on its investment policy and the way how earning does not affect the value is independent of dividend policy.

MM's Hypothesis of irreverence is based on following assumptions:

- The firm operates in perfect capital market
- There are no taxes
- The firm has a fixed investment policy which is not subject to change
- Risk and Uncertainty does not exist.

Considering the above critical assumption. MM provides the proof in support of their argument in the following manner.

Step -1

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

Symbolically,

$$P_O = \frac{D_1 - P_1}{1 + ke} \text{ ---------- (I)}$$

Where,

P_O= current market price (market price at the beginning or the zero period)

K_e= Cost of equity capital (assumed constant)

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

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

Step-2

Multiplying both sides of equation (i) by the number of shares outstanding (n), we obtain the total value of the firm if now new financing exists.

Symbolically,

$$nPo = \frac{n(D_1 - P_1)}{1 + Ke} \text{.....} (II)$$

Step-3

If the firms internal sources of the financing investment opportunities full short of the funds required, and Δn is the number of new shares issued at the end of year at price P_1, then

Symbolically

$$nPo = \frac{nD_1 + P_1(n + \Delta n) - \Delta nP_1}{1 + Ke} \text{.....} (III)$$

Where, n= No of shares at the beginning

Δn= No of equity share issued at the end of the period.

Step-4

If the investment proposal of the firm in the given period of the time can be financed either by retained of the issuance of new share or both, the amount of new issue will be,

Symbolically,

$$\Delta n P_1 = I - (E - nD_1)$$

or $\Delta nP_1 = I - E + nD_1$ ..... (IV)

Where,

ΔnP_1 = The amount obtained from the sale of new share to finance capital budget

I = Total new investment during the period

E = Earning of the firm during the period

E-nD_1 = Retained earnings

Step-5

By substituting the value of ΔP_1 from the equation (IV) to equation (III), we get

Symbolically,

$$nPo = \frac{nD_1 + P_1(n+\Delta n) - \Delta nP_1}{1+Ke}$$

$$\text{Or, nPo} = \frac{P_1(n+\Delta n) - 1 + E}{1+Ke} \quad \text{.....(} V\text{)}$$

Step-6

Conclusion:

Since, dividend doesn't appear directly in expression and E, I, $(n+\Delta n), P_1 and\ Ke$ are assumed to be in depended of dividend.

In other words, MM concludes that dividend policy is irrelevant and dividend policy has no effect in the value of firm. A firm that pays dividends will have to raise funds externally to financing its investment plans. MM holds that when the firm pays dividends, external financing off sets its advantage.

It does not seems so relevant to apply MM approach in Nepalese context because when we apply this approach, the assumption supposed by MM are significantly deviated. In Nepal, we are unable to find the rational investors as well as perfect capital market, which are considered by MM. It does not seem so sound to neglect the flotation cost, transaction cost and tax effect on capital gain as neglected by MM. Arbitrage arguments as explained by MM applies only when there are very sensitive investors and which are lacking in Nepal. Conscious investors always find difference between dividend and retained earning. Thus MM proposition is not relevant in case of Nepal.

2.2.2 Walter's Study

An approach developed by Professors Walter's is considerable interest. Walters conducted a study of dividend and stock price in 1996. Walter argues that dividend policies almost always affect the value of the enterprises. The investment policy of a firm can not be separated from its dividend policy which is just opposite of what M.M said. The key arguments in support of the relevance proposition of this model is the relationship between the returns of firm's investment or it's internal rate of return (r) and it's cost of capital (k). As long as internal rate is greater than the cost of capital (k), the stock price will be enhanced by retention and will very inversely with dividend payment.

The Walter's models based on the various assumptions are given below:

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

Based on above assumption, Walter's formula to determine the market price per share is as follows:

Symbolically,

$$P = \frac{DPS}{Ke} + \frac{r/Ke\,(EPS - DPS)}{Ke}$$

Or,

$$P = \frac{DPS + r/Ke\,(EPS - DPS)}{Ke}$$

Where,

P = Market price per share
DPS = Dividend Per Share
EPS = Earning Per Share
r = internal rate of return
Ke = Cost of Capital

According to Walter's model, the optimum dividend policy depends on the relationship between the firm's internal rate of return (r) and its cost of

capital (Ke). Walter suggests different dividend policy for different types of the firm, which can be summarized as follows:

a. Growth Firm (r>k)

Growth firms are those firms which expand rapidly because of ample investment opportunities yielding return is higher that the opportunity cost of capital. So, firm having (r>k) is referred as grown firms which are able to reinvest earning at a rate which is higher than the rate expected by shareholders. They will maximize the value per share if they follows a policy of retaining all earning for internal investment. Thus correlation between dividend and stock price is negative and optimum payout ratio for a growth firm is zero.

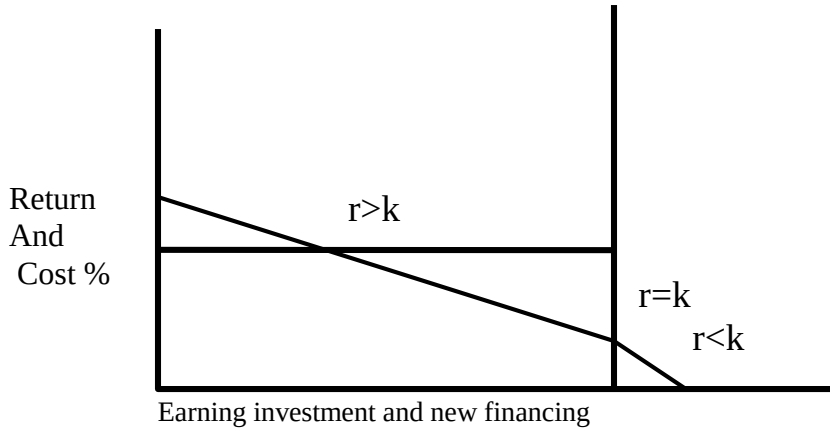
b. Normal Firm (r=k)

The firm having equal internal rate of return (r) and cost of capital (K_e) is known as normal firm. If the internal rate of return (r) is equal to the cost of capital (k) then the dividend payout does not affect the value of share. In such a situation, the market price of share will remain constant for all dividend payout ratios from zero to 100. This type of firm is called as normal firm. There is no optimum dividend policy for such a firm.

c. Decreasing Firm (r<k)

The firm having higher rate of cost of capital (K_e) rather than internal rate of return (r). The relationship between dividends and stock price is positive. i.e. increase in dividend per share yield increase in stock prices. This type of firm is reflected to as declining firm. He argued that 100% dividend policy should maximize the market price of the share for declining firm.

Figure: 2.1
Walter's Study



Thus, Walter conclude that, when the firm is in growth stage then dividend act negatively correlation with price. In normal firm, there is no relationship between dividend value of stock price and in declining firm there is positive relationship between dividend policy and price of the stock.

2.2.3 Linter's Study

Regarding the behavioral aspect of dividend policy in American Context in 1956, Linter made an important study. He investigated a partial adjustment models as he tested the dividend patterns of 28 companies. According to linter, dividend is a function of earning of that year, existing dividend rate, target payout ratio and speed of adjustment .The following are the basis objectives of the study:

- To identify occasions when a change in dividend might well have under active consideration even through no change was made.
- To determine the factor this existed most actively into dividend decision.

Different views were collected with regard to occasion's companies' responsible officials, including present, financial vive- president, treasures, controller and directors. He concluded that a major portion of a firm's dividend could be expressed in the following equation.

$$Div*t = PEPS_t .....(I)$$

$$And,$$

$$Div - Div_{t-1} = a + b\,(Div*t - Div_{t-1}) + e\,t .....(II)$$

Where,

Div*t = Firms desire payment
Eps= Earning Per Share
a= Constant relating to dividend growth
b= Adjustment factor relating to the previous periods dividend and new desired level of dividends were b<1
p= Targeted payout ratio

The major finding of this study were as follows:

- Firms generally thinks to terms of proposition of earning to be paid out.
- In order to modify the pattern of dividend, investment opportunities, liquidity position, funds flows are not considered.
- Firms generally have pay out ratios in view, while determining change in dividend rate or dividend per share.

2.2.4 Gorden Study

Myron J. Gordon has developed another popular and important model relating to the stock valuation using the dividend capitalization approach. Gordon concludes that dividend policy does affect the value of share even when the return on investment and requires rate of return are equal. He explains that investor are not in different between current and retention of earning with the prospects of future dividends capital gain and both. The conclusion of this study is that investor's have a strong preference for present dividends to future gain under the condition of uncertainty. It is assumed that an increase in dividend payout ratio leads to increase in the stock price for the reason that investors consider the dividend yield (D_1 / Po) is less risky than the expected capital gain.

The basic assumptions of Gorden's Study are as under:

- The firm has equity capital only.
- Perpetual life of firm and stream earning is assumed.
- No external equity is available, only retained earning is used for financing any expansion.
- The internal rate of return (r) and cost of capital (Ke) are constant
- There are no corporate taxes.
- The cost of capital for the firm is greater than the growth rate (Ke>g)
- The retention ratio (b) is constant. Thus the growth rate (g) is constant forever.

Gordan's model is also known as Growth model. The formula for finding out the market value per share, proposed by Gordon is given below:
Symbolically,

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

Where,

Po= Market value per share
EPS= Earning Per Share
b= Retention ratio
1-b = Dividend payout ratio
Ke= Capitalization rate/ cost of capital
br= growth rate

According to this model, the effect of dividend can be summarized as follows:

a. Growth Firm (r>ke)

Growth firm is defined as the higher earning than that of cost of capital. i.e. (r>ke). Share price tends to declining in correspondence with payout ratio or decrease in retention ratio. I.e. high dividend corresponding to earning lead to decrease in share. Therefore, dividend and stock prices are negatively correlated in growth firm.

b. Normal Firm ($r= K_e$)

Normal firm indicates those firm whose r=Ke share value of these remains constant regardless of change in dividend policies. That means dividend and stock price are from each other. In other words there is no correlation between dividend and stock prices.

c. Declining Firm (r<Ke)

In case of declining firm, share price tends to enhance with increase in dividend payout ratio (1-b) or decrease in retention ratio (b) .So dividend and stock price are positively correlated with each other in declining firm.

Thus, Gorden also conclude that there are various effect of dividend policy on share price depending on the tend and position of the firm.

2.2.5 Van Horne and MC Donald's Study

Van Horne and MC Donald's conducted a comprehensive study on dividend policy and new equity financing. The purpose of this study was to investigate the combined effect of dividend policy and new equity financing decision on the market value of the firm's common stocks.

Empirical test were performed with year-end 1968 cross section for two industries, using a well known valuation model. For their investment, they employed two sample of firms viz. the 86 electric utilities in the continental USA which were included on the COMPUSTANT utility date tape and 39 companies in the electronic and electric component industries as listed on the COMPUSTANT industrial data type in 1968.

They performed empirical study by testing two regression for the electric utilities and one regression model for electronic and electric components industries.

The first model was,

$P_0 / E_0 = a_o + a_1(g) + a_2(Do/Eo) + a_3(Lev) + u$

Where,

Po/Eo= 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 1960 through 1968

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

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

U = Error term

The second model was,

$Po/Eo=ao+a_1(g)+a_2(Do/Eo)+a_3(Lev)+a4(Fa)+a5(Fb)$

Where,

Fa, Fb, Fc and Fd are dummy variable corresponding to new issue ratio (NIR) group A through D.

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

Again, they tested the following regression equation for electronic- electric components industries.

The third model was

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

Where,

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

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

By using these models they compared the result obtained for the firm's which both pay dividend 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 issues group and it made new equity a more costly form of financing than the retention of earning. They also indicated that the payment of dividend

through excessive equity financing reduces share prices. For forms in the electronics-electric components industry a significant relationship between new equity financing and value was not demonstrated.

2.2.6 Chawala and Srinivasan's Study

Chawala and Srinivasan's Studies about the impact of dividend and retention on share price. They estimated cross sectional relationship of 18 chemicals and 13 sugars industries for the year 1963 to 1973 .The basic objectives of the study are:

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

To achieve these objectives, they used simultaneous equation model as developed by Friend and Pucket in 1964.
The unspecified form of the model is as follows:

Price function

$$Pt=F(Dt,Rt,P/E_{t-1})$$

Dividend supply function

$$Dt=f(Ft,D_{t-1}, P/E_{t-1})$$

Where,

P = Market price per share
D = Dividend per share
R = Retained earning per share
E = Earning per share
P/E =Deviation from sample, Average of price earning ratio
t = Subscript for time

They used two stages least square technique for estimation .They also used lagged earning price ratio instead of lagged price earning ratio, i.e. P/E_{t-1}

From the result of their two stage least estimation, they found that is the case of chemical industry the estimated coefficient had the correct sign and the coefficient of determination of all the equation were very high. It implies that the stock price and dividend supply variation can be explained by their independent variable. But in case of sugar industries they found that the sign

for the retained earning is negative in both year. So, they left sugar industries for future analysis.

For chemical industry, they observed that the coefficient of divided was very high as compared to retained earning. They also found that coefficient of divided was significant at 1% level in both year. Whereas the coefficient of retained earning was significant at 10% level in 1969 and 1% level in 1973. Finally, they concluded that the dividend hypothesis hold good in the chemical industry. Both dividend and retained earning significantly explained the variation in share price in chemical industry.

2.2.7 Baker, Farrelly and Elderman's Study

H.Kent Baker, Gail E Farrelly and Richard B. Elderman survey management view on dividend policy. They made question to corporate financial manager about what the considered most important in determining their firm's dividend policy. The objective of the study are as below:

- To compare the determinants of dividend policy to day with linter's behavior model corporate dividend policy and to assess management's agreement with linter's finding.
- To examine management's perception of signaling and clientele effects.
- To determine whether managers in different industries share similar views about the determinants of dividend policy.

They selected 526 firms for the study purpose which was listed at the New York Exchange (NYSE). These were taken 150 from utility sector, 309 from manufacturing sector and 103 from wholesale/ retail sector. They mailed questionnaire to obtained information about corporate dividend policy. The questionnaire consisted of three parts:

a. 15 closed-end statement about important of various factor that each firms use in determining its dividend policy.
b. 18 closed-end statement about theoretical issue involving corporate dividend policy.
c. A respondent's profit including such items as the firms' dividends and earning per share.

They sent the final instrument to the Chief Financial Officers (CFOs) of the 562 firm's followed by second complete mailing to improve the response rate and reduce potential non-response bias.

Based on the dividends and earning per share data provided by the respondents, they found that payout ratio of the responding utilities (70.3%)

was considerably higher than for manufacturing (36.6%) and wholesale/ retail (36.1%). The result of their study on the aspect of determinant of dividends policy is as follows:

- The highly ranked determinants are first, the anticipated level of a firm's future earning. The second is the pattern of past dividends. They found the high ranking of these two factor is consistent with linter's findings.
- The third important is determinant of dividend policy is availability of cash.
- The fourth determinant is concerned about maintaining or increasing stock price. They found this factor is particularly strong among utilities that ranked this factor second in importance.

2.2.8 Poul . D Koch and Catherine Shenoy Study

A study made by Poul D.Koch and Catherine Shenoy have examined the information effect of dividend changes for firms with different value of Tobin's. They explained the previous more predicative information regarding future cash flow for under investing and over investigate firm than value maximizing firms changes in dividend and capital structure policy convey information to the stock market about the future performance of a firm. They analyze two stages procedure to investigate the issue related to the study topic. Gewete Feedback measures (GFMS) for each firm in the sample. Each GFM measure the incremental predicative information about the future cash flow provided by firm's dividend and capital structure policy in the first stage of three times series analyses. In the second stage, they regress each collecting of feedback measures on Tobin's q and q^2 to see why the information contained of dividend and capital structure policies varies substantially across firm's indicate that about both dividend and capital structure policies provide no significance predictive information.

In the second stage results reveal a distinct V- shaped relation between Tobin's and the amount of predictive information contained at a firms dividend and capital structure policies with a minimum at a q value near one.

This empirical evidence is consistent with the free cash flow hypothesis and it suggested that dividend and capital structure policies provide more predictive information forever and under investing firm than for value maximizing firms.

2.3 Review of Major Studies in Nepal

Very few articles relating directly or indirectly with dividend and stock price are published in Nepal. Some of them, which are significant in this study are reviewed in this section.

2.3.1 Dr. R.S Pradhan's Studies

Dr. Radhe Shyam Pradhan has concluded a study on "Stock Market Behavior in small capital market: A case in Nepal". It is pertinent to put forth here because he has analyzed various ratios related to dividend and market price of share. The study was based on pulled-cross sectional date of 17 enterprises covering the year 1986 to 1990.

The objectives of the studies are as follows:

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

The following model was employed

$$V=b_0+b_1LIQ+b_2LEV+b_3EARM+B_4TURN+B_5COV+Vi$$

The depended variable, V chosen for the study has been specified as under:

- Market equity, number of share of shares multiplied by market price of share (ME)
- Market value of equity to its book value (MV/BEV)
- Price earning ratio (PE)
- Dividend per share to market price per share (DPS/MPS)
- Dividend per share to earning per share (DPS/EPS)

The independent variable was specified as:

LIQ = Current ratio (CR) or Quick/ Acid test ratio (QR)

LEV = Long term debt to total assets (LTD/TA) or long term debt to total capitalization (LTD/ TC). Total capitalization is specified as long term debt plus net worth.

EARN = Return on assets i.e. earning before tax to total assets (ROA) or Return on net worth, i.e. earning before tax to net worth (RONW)

COV =Interest Coverage ratio, i.e. earning before tax to interest

TURN =Fixed assets turnover, i.e. sale to average fixed assets (S/FA), or Total assets turnover, i.e. Sales to average total assets (S/TA)

U =Error Term

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

- Stocks with larger ratio of dividend per share to market price per share have higher liquidity. Liquidity position of stocks paying lower dividend is also more inconsistent as compared to stocks paying higher dividend.
- Stocks with larger ratio of dividend per share to market price per share have lower leverage ratio. So leverage ratio of stock paying smaller dividends were also more variable as compared to stock paying higher dividend
- Stock with larger ratio of dividend per share to market price per share also have higher earnings. But these earning ratios of stock paying larger dividend were also more variable as compared to stock paying smaller dividends.
- Positive relationship is observed between the ratio of dividend per share to market price per share and turnover ratios. Stocks with larger ratio of dividend per share to market per share to market per share also higher turnover ratio. Turnover ratio of stock paying larger dividends are also more variable than that of stock paying smaller dividend.
- There is also a positive relationship between the ratio of dividend per share to market price per share and interest coverage. Stock with higher ratio of dividend per share to market price per share also have higher interest, coverage interest if stock paying larger dividends was also more variable compared to stock paying smaller dividends.
- So, in conclusion, it indicates positive relationship of dividend per share to market price per share with liquidity, profitability, assets turnover and interest covering and negative relationship with leverage.

2.3.2 Dr.M.K. Shrestha's Study

Dr Manohar Krishna Shrestha has written an article about "Public Enterprises: Have they dividend paying ability?" Published in 1981 gives short glimpse of the dividend performance of some public enterprises of that time in Nepal. Dr. Shreshtha has highlighted following issue in his article:

- Government of Nepal expect two things from the public

a. They should be in a position to pay maximum dividend

b. The public enterprises should be supporting in financial matter in future year to come.

But non of these two objective 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 the government of Nepal appointed on directors of board do nothing but simple shows their bureaucratic personalities; Bureaucracy has been the enemy of efficiency and Lead Corporation to face losses. Losting corporations are, therefore, not in position to pay dividend to government.
- Another reason is the lack of self-criticism and self consciousness. Moreover, corporate leadership come as manager are not ready to have self criticism. In fact, all so called manager of corporations have not been able to identify themselves regarding what they can do contribute as managers of corporation. So, government of Nepal must be in a position to develop a financial target on corporate investment by imposing financial obligation corporations.
- The article points irony about the government business on enacting dividend from Nepal Banks Ltd irrespective of sufficient profit and not to show interest. In case of Rastriya Banijya Bank Ltd show regardless of profit to be relieved from dividend obligation in spite of considerable profit.

The improvements suggested by the author are:

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

If Government of Nepal wants to tap resources through dividend the following criteria should be followed:

- Proper evaluation of enterprises on capability of paying dividend through corporation co-ordination committee.
- Imposition of fixed rate of dividend by government of financially should public enterprises
- Circulating the information about maximum rate of dividend to all public enterprises
- Specifying performance targets in term of profit, priorities on timing and plans and developments of strategic plans that bridges the gap between aspiration and reality.
- Identification of objectives in Corporation Act, Company Act, or special charters so as to clarify public enterprises managers regarding their financial obligation to pay dividend to government.

2.3.3 K.D. Manandhar's Study

Kamal Das Manandhar study on "Preliminary test of lagged- Structure of dividend" in 2000 tests whether Nepalese corporate firm consider the lagged earning dividend paid to pay the dividend in current year. For the test, 17 Nepalese firm were taken as sample and different hypothesis were tested on them. The conclusions drawn by the study were as follows:

- There is significant relationship between change in dividend policy in term of DPS and change in lagged earning.
- Overall, there is a positive relationship between change in lagged consecutive earning and dividend per share.
- There is relation between distributed lag profit and dividend.
- When change in lagged consecutive earning is greater than zero, 65% of the cases change in dividend per share.
- Overall increase in EPS has resulted in the increase in dividend payout in 66% of the case while in order decrease in EPS resulted in dividend payment.
- Nepalese corporate firms have followed the practice of maintaining constant dividend per share.

Corporate firms do not take in account in one year and two year lagged earning. Generally, Nepal's corporate firms are reluctant to decrease dividend. They either keep the dividend payment constant or higher so taken advantage of information connect and singling effect of dividend relating to the firms, continued process and performances, sound financial strength, favorable investment environment. Lower risk ability to maintain dividend rate finally to increase the market price of the stocks in the stock price.

The major findings of the study are as follows:

- Firms generally think in term of proportion of earning to be paid out.
- Investment requirement are not considered for modifying the pattern of dividend behavior.
- Firms generally forget the payout ratio in view while determining change in dividends per share.

2.4 Review of Previous Master's Thesis

In the last few years, prior to thesis, some students of MBS and MBA program have conducted research about the dividend and its relation with stock prices in various sector. Some of them, which are supposed to be relevant for this study have been reviewed and presented in this section.

2.4.1 Rohini Rai's Study

"Dividend payment pattern of Nepalese commercial Banks". Conducted by Miss Rohini Rai was carried out by using secondary data of commercial banks in 2009.

Objectives of the study are as follows:

- To analyze the trend of dividend payment pattern of Nepalese Commercial Banks during five year period from 2003/04 to 2007/08.
- To examine the relation between earning dividend retained earning and market price of stock.
- To examine the relation between P/E ratio and D/P ratio.
- To examine the relation between dividend yield and earning yield.
- To know whether there is any uniformity among EPS, DPS, DPR of the sample banks or not.

Major finding of the study are as follows:

- There is positive correlation coefficient between EPS and MPS of all the five banks. Similarly, computed t- value of the coefficient of correlation (r) between mean value of EPS and MPS of concerned bank's are smaller than the table value at 5% level of significance. Therefore, Null hypothesis (Ho) is accepted in case of all banks. The implies that there is no statistically significant correlation between EPS and MPS.
- There is positive correlationship between MPS and DPS of all concerned bank's. Similarly, Computed t-value of the coefficient of correlation (r) between mean value of MPS and DPS of Concerned for banks except Himalayan bank are lower than the table value of 5% level of significance. Therefore, Null hypothesis (Ho) is accepted for four banks and alternative (Ha) is accepted for Himalayan Bank. It implies that there is statistically significant correlation ship between mean value of EPS and DPS of Himalayan Bank.
- There is positive correlation between EPS and DPS of five concerned banks. Similarly, the computed t-value of the coefficient of correlation (r) between mean value EPS and DPS of concerned banks are lower than value at 5% level of significance. Therefore, null hypothesis is accepted in concerned banks. It implies that there is no statistically significant correlation between the mean value of EPS and DPS of concerned banks.
- F-test suggests that of the concerned five banks are significantly different at 5% level of significance.
- F-test suggests that DPS of the concerned five banks are significantly different at 5% level of significance.

- F-test suggests that DPR of the concerned five banks' are significantly different at 5% level of significance.

2.4.2 Shambhu Ghising's Study

A thesis title "Dividend Policy of Nepalese Commercial Banks" written by Mr. Shambhu Ghising in 2010 was carried by using the secondary data of three commercial banks

Objectives of the study are as follows:

- To analyze and identify the dividend pattern
- To identify the relationship between dividend policy and other financial indicators
- To study whether the dividend per share affected by the earning per share, market price per share and retained earning.
- To find out the problem and suggest for future improvement in future.
- To study t he impact of dividend on its investment and shareholders.

Major finding of the study are as follows:

- The analysis of MPS shows that MPS of all three sample banks are in increasing trend but in this year it is decreasing .It also shows that the average MPS of NABIL is highest and average MPS of NIC is lowest .NIC has the highest C.V and EBL has lowest C.V among the sample banks .It indicates that NIC has greater variability in MPS and it's capital increasing rate is higher than others. But EBL has less variability in MPS.
- The average earning per share of banks is satisfactory. NABIL lies in top position and it is followed by EBL and NIC respectively. Among the sample banks, the C.V of EBL is greater than other sample banks and the C.V of NABIL is lowest. It means common stock of EBL is riskier as compared to other sample bank .The common stock of NABIL is less risky as compared to other sample banks because it has lowest C.V than others.
- The DPS analysis shows that the DPS of NABIL is greater and NIC is lower among sample banks. Higher dividend per share creates positive attitude of the shareholders towards the company, which consequently helps to increase the market value of shares. It shows that C.V of DPS of NIC is greater and EBL is lowest .It indicates that among the sample banks, EBL has the highest consistency in paying dividend whereas the DPS of NIC is highly fluctuating.
- The dividend pay out ratio of NABIL is higher and NIC has lowest among all, which indicates that NABIL is following aggressive dividend

policy and it has the ability to pay the dividend is strong than others and NIC has weak ability to pay dividend .The C.V of DPR of NABIL indicates that the NABIL'S D/P Ratio to common shareholders are much better than other sample banks.

- Dividend yield of NABIL is higher and NIC has lowest among all sample banks. In indicates that the share of NABIL is worth buying .The C.V of D.Y is highest of NIC and lowest of NABIL indicates that NABIL has the highest consistency followed by EBL whereas DY of NIC is highly fluctuating than other banks.
- The P/E Ratio of NABIL, EBL and NIC are almost close to each other.
- The average Retained earning per share of NIC is highest than other sample banks, which means there are more chance to gain profit from future investment opportunities.
- The correlation between EPS and DPS is positive for NABIL and EBL has the significant relationship at 5% level of significance. Whereas NIC have the negative correlation between EPS and DPS.
- The correlation between EPS and MPS is positive of all three sample banks and has the significant relationship at 5% level of significance. It means the EPS and MPS of these banks are strongly correlated with each other.
- The regression line of DPS and EPS, the beta coefficient is positive in all sample banks. It might be able to pay higher DPS.
- The T- value between DPS and EPS clearly shows that the results are statistically significant for all sample banks except NIC.
- The regression line of MPS and EPS, the beta coefficient is positive for all banks, which gives directly positive impact to market value of shares.
- The T- value between MPS and EPS clearly shows that the results are statistically significant for all sample banks.
- The F- value between MPS on EPS and DPS states that there is linear relationship between MPS, EPS and DPS or the regressive equation of MPS on EPS and DPS is significant for all the sample banks except NIC.

CHAPTER-III

RESEARCH METHODOLOGY

3.1 Introduction

A research methodology helps to solve the research problem in a systematic way .This chapter has been designed and developed as a guideline or a plan for the achievement of objectives, set and hypothesis developed as a guideline or a plan for the achievement of objective and hypothesis developed for the purpose of this study in the first chapter. Reliability and validity of research work is facilitated by research methodology and the basic objective of this chapter is to guide chapter for data presentation, descriptive and empirical analysis of dividend policies, So, suitable research methodology as demanded by the study has been followed. It is intended to use simple and expressing research methodology.

3.2 Research Design

Research design is a plan, structure and strategy of investigation. It is a blue print for the collection, measurement and analysis of data. A research design is the arrangement of conditions and analysis of data in a manner that aims to combine relevance to research purpose with economy in procedure. A research design is the specification of method and procedure for acquiring the information needed. It is the overall operational pattern of framework for the project that stipulates what information is to be collected, from which sources and by what procedures. Thus a research design is a plan for the collection and analysis of data. For research there exists different types of research design like, Historical research, Descriptive research, Case study research, Field study research, analytical research, True experimental research and so on .This study mainly concerned with historical research.

The research design has to be geared to the available time, energy and money, to the availability of data, to the extent to which it is desirable or possible to impose upon persons and social organizations which might supply the data. There is no such thing as a single or correct design. Research design represents a compromise dictated by the many practical consideration that goes into social research. Different workers will come up with different design favoring their own methodology and theoretical predisposition. “Research design describes the general plan for collecting, analyzing and evaluating data after identifying what the researcher wants to

know and what has to be dealt with in order to obtain the required information". (Wolff: 2002:74)

3.3 Population and Sample

The term "Population and Sample" for research mean all members of any well defined class of people, events or the objective, organization or firm.

Population

The collection or the aggregate of objects or the set of result of an operation is called population. The population means aggregate or the entire group. Population consists of large group. Due to its large size it is difficult to collect detailed information. So, a group is chosen that is believed to be representative of the population.

Sample

Sampling is the process by which inference is made to the whole by examining only a part "When sample of the elements are selected with the intension of finding out something about the population from which they are taken that group of elements is referred as a sample and the process of selection is called sampling". [Sthapit: 1998:175]. The purpose of the sampling is to provide various types of statistical information of a quantative or qualitative nature about the whole (i.e. Population) by examining a few selected units. The sample allows the researcher more time to make an intensive study of a research problem. Good sampling technique can save the researcher both time and money as well.

The populations of this study are as follows:

1. Nepal Bank Limited
2. Rastriya Banijya Bank
3. Nabil Bank Limited
4. Nepal Investment Bank Limited
5. Standard Chartered Bank
6. Himalayan Bank Limited
7. Nepal SBI Bank Limited
8. Nepal Bangladesh Bank Limited
9. Everest Bank Limited
10. Bank of Kathmandu Limited
11. Nepal Industrial and Commercial Bank Limited
12. Nepal Credit and Commerce Bank Limited
13. Lumbini Bank Limited
14. Machapuchare Bank Limited

15. Kumari Bank Limited
16. Laxmi Bank Limited
17. Siddhartha Bank Limited
18. Global Bank Limited
19. Kist Bank Limited
20. NMB Bank Limited
21. DCBL Bank Limited
22. Bank of Asia Nepal Limited
23. Sunrise Bank Limited
24. Prime Commercial Bank Limited
25. Citizen Bank Limited
26. Janta Bank Limited
27. Mega Bank Limited
28. Agricultural Development Bank Limited
29. Commerz and Trust Bank Limited
30. Civil Bank Limited
31. Century Bank Limited

For this research work, only three commercial banks were taken as sample banks out of total population. They are as follows:

1. Standard Chartered Bank Limited
2. Himalayan Bank Limited
3. Bank of Kathmandu Limited

3.4 Nature and Sources of data

This study is primarily based on secondary data .The data relating to the dividend policy are obtained from the Nepal Stock Exchange and financial statement of respective banks from their websites. Other major sources to collect secondary data are viewed from the published materials, books by different authors, unpublished thesis report, newspaper, magazines, interest, AGM report of the listed commercial banks, Economic report published by Nepal Rastra Bank, Economic Survey Published from the Ministry of Finance, Published by the concerned agencies and different book relating to the topic of dividend.

3.5 Data Processing Procedure

In data processing first of all we arrange all the collected statement and filter those statements for the purpose of study. Data obtained have no meaning unless they are arrange and presented in a systematic way. Further, they need to be verified and simplified for the purpose of analysis. Moreover data

and information so gathered are to be checked and tabulated in such way that provides convenience for computation and interpretation.

In this study the relevant data are presented in table, graph etc for the understable way and unnecessary data has excluded. It is attempted way out the conclusion from the available data with the help of various as well as statistical tools.

3.6 Data Analysis Tools

Collected data relevant facts and figure are arranged and presented in systematically tabulated and formulated under different headings for the purpose of analysis. This study has used both descriptive as well as inferential techniques of analysis. In this study mainly two types of analysis tools are applying for the data analysis. As written in previous topic the tools are financial and statistical tools. Using financial and statistical tools would draw out the relation between different variables related to the study topic. Using financial and statistical tools would draw it out. Financial tools cover to analysis EPS, DPS, MPS, DPR, P/E ratio, DY etc over the period of study. Likewise statistical tools cover to analysis, mean, standard deviation, coefficient of variable, correlation, and regression etc over the period of study.

3.6.1 Financial Tools

In this study variable financial tools have been used which are as follows:

a. Earning Per Share (EPS)

Earning Per Share is defined as the ratio of earning available to common stock holders to number of share outstanding. It measures the profit available to equity shareholders on a per share basis i.e. the amount they can get every share held. It is calculated by dividing the profit available to the shareholder by the number of share outstanding. The profits available to the ordinary shareholders are represented by net profit after tax and preference dividend. Thus,

$$\text{EPS} = \frac{\text{Net Profit available common stock shareholder}}{\text{Total number of common share out standing}}$$

b. Dividend Per Share (DPS)

Dividend Per Share indicates the rupees earning distributed to common stock holders per share held than dividend per share also affects the market price of stock but it doesn't affect the earning per share. So, it is assumed as

an independent variable to EPS. Generally, the higher DPS creates positive attitude of shareholder toward the company common stock which consequently helps to increase the market value of share and it also works as the indicator of better performance of the company management. It is calculated by dividing the total dividend distributed to common shareholder by total number of common share outstanding. Thus,

$$\text{DPS} = \frac{\text{Total dividend distributed to common shareholder}}{\text{Total number of common share outstanding}}$$

c. Market Price Per Share (MPS)

Market Price Per Share is that value of stock which can be obtained by a firm from the market. Market value of stock is one of the variable, which is affected by the dividend per share and earning per share of the firm. If the earning per share and dividend per share is high, the market value of share will also be high.

In this study market per share is closing. Market per share on which the share has been traded in Nepal Stock Exchange Limited. In financial statement of Nepal Stock Exchange Limited, there are opening market price of share and low market price of share. The financial statement of NEPSE has computed other variable on the basis of closing market per share. Therefore, we have been applied the MPS in closing market price per share.

d. Dividend Payout Ratio (DPR)

Dividend payout ratio is the proportion of earning distributed as dividend to total earning. This ratio shows the percentage of profit, which is distributed as dividend and what percentage is retained as reserve and surplus for the growth of bank. The dividend payout ratio of a bank depends upon the earning made by the bank. Higher earning enhances the ability to pay more dividend and vice-versa. It is calculated with the purpose of knowing earnings power dividend policy of selected bank.

$$\text{DPR} = \frac{\text{Dividend Per Share (DPS)}}{\text{Earning Per Share (EPS)}}$$

e. Price Earning Ratio (P/E Ratio)

Price earning ratio is the ratio between market price per share and earning per share. P/E ratio reflects the price which is currently paid by the market for each rupee of currently paid by the market for each rupee currently

reported earning. It is generally expressed in time. P/E ratio is an important measures of performance for the company in that they reflects the combined influence of return and return ratio. The higher P/E ratio implies the high market share price of a stock given the earning per share and greater confidence of investors in the firm's future.

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

f. Dividend Yield (DY)

Dividend yield 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 .This ratio is highly influences the market price per share because a small change in dividend per share can bring effective change in the market value of the share. The share with higher dividend yield is worth buying, thus the price of higher dividend yield increase sharply in the market. This ratio is calculated by dividing dividend per share by market price per share. Thus,

$$\text{DY} = \frac{\text{Dividend Per Share (DPS)}}{\text{Market Price Per Share (MPS)}}$$

3.6.2 Statistical Tools

For supporting this study, various statistical tools have been used .The result of analysis has been properly tabulated, compared, analyzed and interpreted. In this study following statistical tools are used to analyze the relationship between dividend and other variable.

a. Arithmetic Mean or Average ($\bar{x}$)

Arithmetic mean or average is one of the most popular and widely used measured of representing the entire data by one value called average. "Average is statistical constant which enables us to comprehend in a single effort the significance of the whole." [Shingh: 1993:101]. It is an envoy of the entire mass of homogeneous data. It provides the gist and gives the bird's eye view of the huge of a widely numerical data. Its value can be obtained by adding together all the items and by dividing this total by the number items.

$$\bar{x} = \frac{\sum x}{N}$$

Where,

$\bar{x}$ = Arithmetic mean or Average

$\sum x$ = Sum of Observation

N = Total number of observation

b. Standard Deviation (¢)

The standard deviation is the absolute measure of dispersion in which the drawbacks present in other measures of dispersion are removed. It is said to be the best measure of dispersion as it satisfies most of the requisite of good measure of dispersion. Karl Pearson first introduced the concept of standard deviation in 1983. It is defined as the positive square root of the mean of square of the deviation taken from the arithmetic mean. Standard deviation is denoted by ¢ which is calculated as follows:

$$¢ = \sqrt{\frac{\sum (x - \bar{x})^2}{N}}$$

Where,

¢ = Standard Deviation

x = Set of observation

$\bar{x}$ = Arithmetic Mean

N= Total number of observation

c. Coefficient of Variation (C.V)

Coefficient of variation is the most commonly used to measurement of the relative variation developed by Karl Pearson. The coefficient of variation is relative based on the standard deviation and is defined as the ratio of the standard deviation to the mean expressed in percent. It is independent of unit. Hence, it is suitable measure for comparing variability of two series with same or different units. The series for which the coefficient of variance is greater is said to be more variables or conversely, less consistent, less homogeneous, less uniform, less stable than the other and vice-versa. It is denoted by C.V and obtained by dividing the standard deviation by arithmetic mean. It is calculated as follows:

$$C.V = \frac{¢}{\bar{X}}$$

Where,

C.V= Co-efficient of variation

¢ = Standard Deviation

$\bar{x}$ = Arithmetic Mean or Average

d. Correlation Coefficient (r)

The correlation coefficient is the techniques use to measure the closeness of the relation between the variable. Correlation coefficient may be defined as the degree of linear relationship existing between two or more variables. These variable are said to be correlated when the change in the value of one result change in another variable. 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 variable are related with each other and to what extent variations is one leads to the variation in the other.

The value of coefficient of correlation always lies between $\pm$. A value of +1 indicates a positive relationship between the variable and a value of -1 indicates a negative relationship between the variable. A value of zero indicates that there is no relationship between variable or the variable are correlated. Correlation coefficient is denoted by r which is calculated as follows:

$$r = \frac{N\sum xy - \sum x \sum y}{\sqrt{N\sum x^2 - \left(\sum x\right)^2}\ \sqrt{N\sum y^2 - \left(\sum y\right)^2}}$$

Where,

r =Person's correlation coefficient

N =Total number of observation

$\sum xy$ =Sum of the value of two variables multiplies

$\sum x$ =Sum of the value of variable of 'X'

$\sum y$ =Sum of the value of variable of 'Y'

$\sum x^2$ =Sum of the squared value of variable 'X'

$\sum y^2$ =Sum of the squared value of variable 'Y'

$\left(\sum x\right)^2$ =Squared of the value of variable 'X'

$\left(\sum y\right)^2$ =Squared value of the variable 'Y'.

e. Coefficient of Determination (r^2)

The coefficient of determination is a much useful and better measure for interpreting the value of 'r' which gives the performance of variable in the dependent variable that is accounted by the independence variable. The coefficient of determination value can have range zero to one. A value one can occur only if the unexpected variation is zero which simply mean that all the data points in the scatter diagram fall exactly on the regression line. The

coefficient of determination is defined as the ratio of explained variance to the total variance. It is also the square of correlation coefficient. Thus,

$$r^2 = \frac{Explained\ \text{var}\ iance}{Total\ Variance}$$

Or,

$$r^2 = 1 - \frac{Un\ \text{exp}\ lained\ Variance}{Total\ Variance}$$

Or, $r^2 =$ Square of correlation coefficient (r)

Where,

$r^2 =$ Coefficient of determination

f. Probable Error

Probable error of the correlation coefficient denoted by P.E is applicable for the measurement of reliability of calculated value of correlation coefficient (r). The Probable error (P.E) is defined by

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

Where,

$r^2 =$ Coefficient of determination

N = Total number of observation

It is used in interpretation whether calculated value of r is significant or not

- If r <P.E, it is insignificant. So, perhaps there is no evidence of correlation
- If r>6P.E, it is significant

The probable error of correlation coefficient may be used to determine the limits within which the population coefficient lies. Limit for population correlation coefficient are $r \pm P.E$.

g. Regression Analysis

Regression analysis is widely used statistical tools which is used in estimating the value of one variable give the value of dependent of another. In other words, Regression analysis provides estimated of value of dependent variable from values of independent variable. The device used to accomplish this estimation procedure is the regression line. The regression line describes the average relationship existing between X and Y variables. i.e. it display mean value of X for given value of Y, the equation of this line is known as the regression variation, provides estimates of the dependent variable when values of independent variable are inserted into the equation.

The regression equation of y on x is expressed as:

$$Y = a + bx$$

Where,

Y = Depended Variable
a = Y-intercept of regression constant
b = Slope of line of regression coefficient
x = Independent variable

Both 'a' and 'b' in the equation is called numerical constant because for any given straight line their value does not change. The value 'a' and 'b' are obtained by solving the following simultaneous equations.

$$\sum y = Na + b\sum x \ldots\ldots\ldots\ldots (i)$$

$$\sum xy = a\sum x + b\sum x^2 \ldots\ldots\ldots (ii)$$

Where,

$\sum y$ =Sum of the value of variable of 'Y'
N =Total number of observation
a =Regression constant
b =Regression Coefficient
$\sum x$ =Sum of the value of variable of 'X'
$\sum xy$ =Sum of the value of two variables multiplies
$\sum x^2$ =Sum of the squared value of variable 'X'

- **Regression Constant (a)**

The regression constant synonymous with numerical constant which determine the distance of the fitted line directly above of below i.e. Y-intercept is called regression constant. It is better to understand that regression constant indicates the mean or average effect on dependent variable if the entire variable omitted from the model. In other words, 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 the regression constant (a) we can calculated as follows:

$$a = \overline{Y} - b\overline{x}$$

Where,

a =Regression constant
$\overline{Y}$ =Mean or Average of 'Y"
b =Regression Coefficient
$\overline{x}$ = Mean or Average of 'X"

- **Regression Coefficient (b)**

The regression coefficient of each independent variable shows the marginal relationship between dependent variable and those variable holding constant effect of all other independent variable in the regression model. In other words, the regression coefficient explain how change in independent variable affect the value of dependent variable estimate. It is also known that numerical constant which determines the change in dependent variable per unit change in independent variable. To find regression coefficient (b) we can calculate as follows:

$$b = \frac{N\sum xy - \sum x \sum y}{N\sum x^2 - \left(\sum x\right)^2}$$

Where,

b = Regression Coefficient

N = Total number of observation

$\sum xy$ = Sum of the value of two variable multiplied

$\sum x$ = Sum of the value of variable 'X'

$\sum y$ = Sum of the value of variable 'Y'

$\sum x^2$ = Sum of the squared value of variable 'X'

$\sum y^2$ = Sum of the squared value of variable 'Y'

h. Standard Error Of Estimate (S.E.E)

Perfect prediction or estimation with the help of regression equation, is practically impossible. Standard error of estimate is used to measure the reliability of the estimating equation. It measures the variability of the observed value around the regression line. It also measures the reliability of the estimating equation, indicating the variability of the observed values differ from their predicted value on the regression line. The smaller value of S.E.E, the better will be the estimate of line. If the S.E.E is zero, then the estimating equation is perfect estimator (i.e. cent percent correct estimator) of the dependent variable and there will be no variation about the line. It is calculated as follows:

$$\text{S.E.E} = \sqrt{\frac{\sum y^2 - a\sum y - b\sum xy}{N-2}}$$

Where,

S.E.E = Standard error of estimate

$\sum y^2$ = Sum of the squared value of variable 'Y'

a =Y intercept of regression constant

$\sum y$ = Sum of the value of variable 'Y"

b = Slope of line of regression coefficient

$\sum xy$ = Sum of the value of two variable multiplied

N = Total number of observation

i. Test of Hypothesis

One of the important application of statistical inference is 'test of hypothesis' in testing of hypothesis, an assumption is made about the population parameter. To test whether the assumption or hypothesis is right or wrong. A sample is selected from the population, sample statistic is obtained, observe the difference between sample mean and the hypothesized population value and test whether the difference is significant or insignificant. Smaller the difference, the sample mean is close to the hypothesized value, and larger the difference the hypothesized value has low chance to be correct. The hypothesis of this research work as follows.

a. Null Hypothesis (Ho): There is no significant difference in EPS of SCBL, HBL and BOK.

Alternative Hypothesis(H_1): There is significance difference in EPS of SCBL, HBL and BOK.

b. Null Hypothesis (Ho) : There is no significant difference in DPS of SCBL, HBL and BOK.

Alternative Hypothesis(H_1): There is significance difference in DPS of SCBL, HBL and BOK.

c. Null Hypothesis (Ho): There is no significant difference in MPS of SCBL, HBL and BOK.

Alternative Hypothesis(H_1): There is significance difference in MPS of SCBL, HBL and BOK.

T- test

The t-test states that if the sample size is less than or equal to 30 (i.e. $n \leq 30$), then the sampling distribution of the sample follows T-test .A method of dealing with small sample was developed by British Statistician W.S Gosset in 1908. It is used for finding more appropriately the two limits where is the estimate would probably lies. To test in the context of small sample, t-value is calculated first and compared with the table value of't' at

a certain level of significance for given freedom. The T- test is commonly called student's T- distribution or simple student's distribution. The following formula is applied to calculated t-value.

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

Where,

b = Regression Coefficient

S_b = Standard error of beta coefficient

Note: $S_b = \frac{S.E.E}{\sqrt{(X - \bar{X})^2}}$

F-test

F-test is basically used to test for the equation of population variance and equality of several population means. F-test shows the variance significant difference or not. When we need to test the significant of the difference among more two sample means, F-test is suitable techniques, called the "Analysis of Variance" using ANOVA technique we will able to make inference about whether our sample are drawn from population having the same mean. So, one-way ANOVA method is used to examine the equality between sample mean.

$$F = \frac{Mean\ Sum\ of\ Square\ between\ Samples\ (MSC)}{Mean\ Sum\ of\ Square\ within\ Samples\ (MSE)}$$

CHAPTER-IV

PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

Presentation and analysis of data is the major and important part of the study which helps us to find out the important suggestion and guideline for fulfillment to existing problem of sample banks. The main objectives of this chapter are to achieve the objectives, which are set in first chapter. In this chapter, the effects have been made to analyze the comparative dividend policy of concerned banks of the attitude of management towards the optimum dividends decision in Nepal. The included data are collected form various sources and these data are tabulated, analyzed and interrelated. This chapter mainly divided into two parts. One is descriptive analysis and another is inferential analysis.

4.2 Financial Analysis

Financial analysis is to analyze and compare some variable such as EPS, DPS, MPS, DPR, P/E ratio and dividend yield during the year 2005/06 to 2009/10 of 3 sample banks to analysis their dividend policy. This section also attempts to interpret and compare sector-wise mean value (Average), Standard deviation and coefficient of variance of EPS, DPS, MPS, DPR, P/E ratio and dividend yield of selected banks for the study. The above analysis and interpretation has been presented with the help of tables (from table no 4.1 to 4.6)and figures (from figures no 4.1 to 4.6).

4.2.1 Earning Per Share (EPS)

Earning per share is computed to know the earning capacity and to make comparison between concerned banks. It is calculated by dividing the profit available to the shareholders by number of share outstanding.

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

Table no: 4.1
Earning per share of Respective Banks

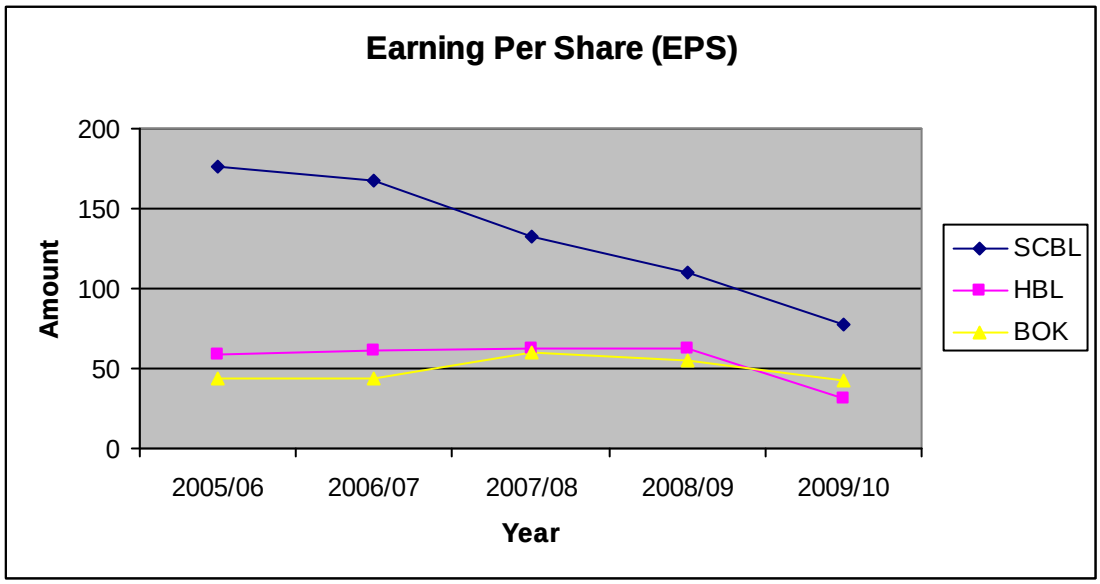
(in Rs)

Year	SCBL	HBL	BOK
2005/06	175.84	59.24	43.67
2006/07	167.37	60.66	43.50
2007/08	131.92	62.74	59.94
2008/09	109.99	61.90	54.68
2009/10	77.65	31.80	43.08
Average $(\bar{x})$	132.55	55.27	48.97
S.D (¢)	36.36	11.99	7.01
C.V %	27.43	21.33	14.31

Source: Appendix I (A)

The earning per share of the banks under study are presented in graphical forms as below

Figure No: 4.1



The above table (Table no: 4.1) shows the earning per share of three commercial banks with their average EPS as well as the standard deviation and coefficient of variation of EPS of those banks over the year 2005/06 to 2009/10.

From the above table, we can see that the highest EPS is Rs 175.84 in 2005/06 of SCBL but in decreasing way whereas the lowest EPS is Rs 31.30

in 2009/10 of HBL during the study period. SCBL has the highest average EPS (i.e. Rs 132.55) and that of BOK has the lowest average EPS (i.e. Rs 48.97). Comparatively, the earning position of SCBL is better than HBL and BOK. The earning position of HBL is also good than BOK.

The total risk can be measured by standard deviation, higher the S.D higher will be risk. So, SCBL has the highest S.D (i.e. 36.36) and BOK has the lowest (i.e. 7.01). Thus, the risk of SCBL is higher than HBL and BOK. BOK has low risk than other banks.

Similarly, coefficient of variance, measures the variability. Less C.V indicates more will be the uniformity, consistency or less price movement and more C.V indicates less will be the uniformity, consistency or more price fluctuating. So, BOK has lowest C.V (i.e. 14.31%). It indicates that BOK has less price movement or more consistency among the banks.

4.2.2 Dividend Per Share (DPS)

Dividend Per Share indicates the part of earning distributed to shareholders on per share basis and calculated by dividing the total dividend to equity shareholder by the total number of equity share outstanding.

The dividend per share (DPS) of the banks under study are tabulated as follows:

Table no: 4.2
Dividend Per Share of Respective Banks

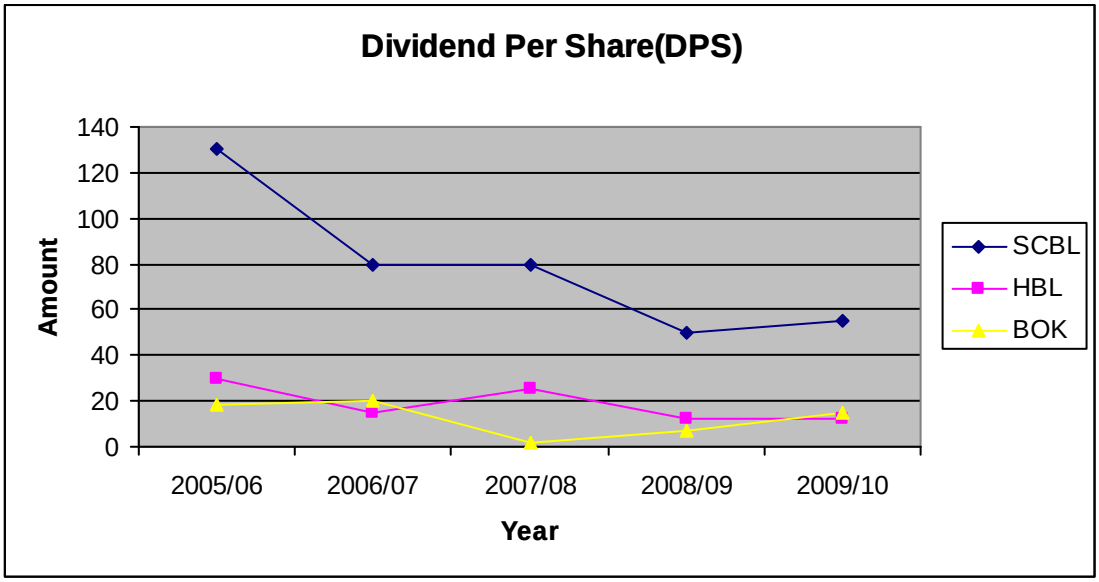
(in Rs)

Year	SCBL	HBL	BOK
2005/06	130	30	18
2006/07	80	15	20
2007/08	80	25	2.11
2008/09	50	12	7.37
2009/10	55	11.84	15
Average $(\bar{x})$	79	18.77	12.5
S.D (¢)	28.35	7.39	6.74
C.V %	35.89	39.37	53.92

Source : Appendix I (B),

The dividend per share (DPS) of the banks under study is presented in graphical forms as below:

Figures no: 4.2



The above table (Table no 4.2) shows the dividend per share of three commercial banks with their average DPS as well as the standard deviation and coefficient of variance of DPS of those banks over the year 2005/06 to 2009/10.

From the above table we can see that the highest DPS is Rs 130 in 2005/06 of SBCL but in decreasing way. Whereas the lowest DPS is Rs. 2.11 in 2007/08 of BOK through out the study period. SBCL has the highest average DPS (i.e. Rs 79) and that of BOK has the lowest average DPS (i.e. Rs 12.5). It shows that SCBL has the satisfactory level as it has distributed it's dividend than other banks.

In comparison of standard deviation and coefficient of variance, SCBL has the highest S.D (i.e. 28.35) and lowest C.V (i.e. 35.89%). Whereas, BOK has the lowest S.D (i.e. 6.74) and highest C.V (i.e. 53.92%). Thus, the risk of SCBL has the highest but more consistency or less fluctuation in it's dividend policy and BOK has lower risk but less consistency or high level of fluctuation in it's dividend policy during the study period.

4.2.3 Market Price Per Share (MPS)

Market Price Per Share is that value of stock, which can be obtained a firm from the market. It indicates the selling price of one share in the market. NEPSE has treated MPS on closing market price per share. Therefore, we

have been applied MPS in closing market price per share. The market price per share (MPS) of the banks under study are tabulated as follows

Table no: 4.3

Market Price Per Share of Respective Banks

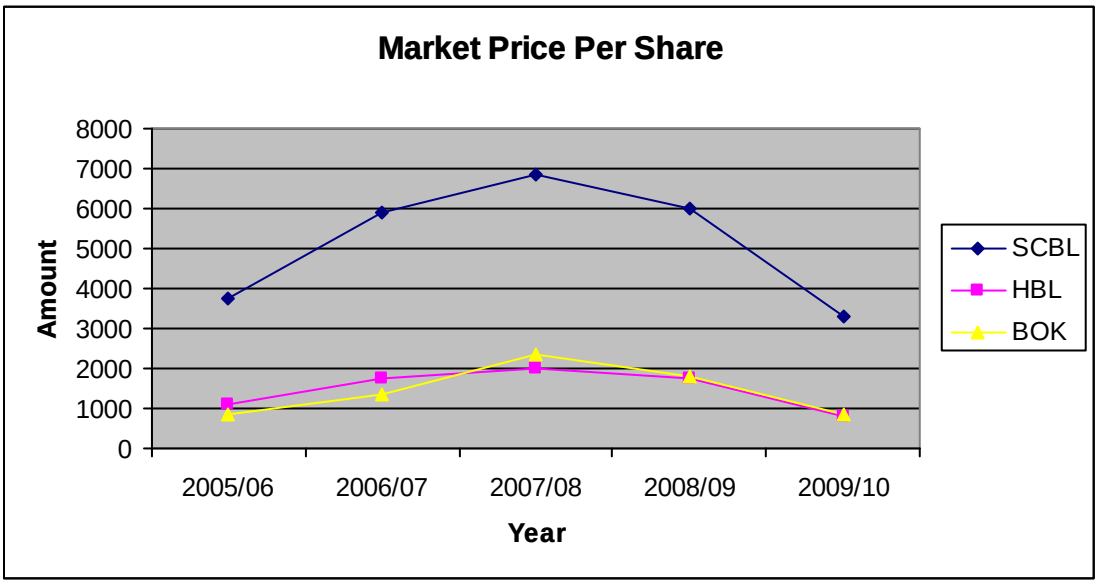
(in Rs)

Year	SCBL	HBL	BOK
2005/06	3775	1100	850
2006/07	5900	1740	1375
2007/08	6830	1980	2350
2008/09	6010	1760	1825
2009/10	3279	816	840
Average $(\bar{x})$	5158.80	1479.20	1448
S.D (¢)	1379.52	443.01	581.09
C.V %	26.74	29.95	40.13

Source: Appendix I (C)

The market price per share (MPS) of the banks under study are presented in graphical forms as below

Figure no: 4.3



The above table (Table no 4.3) shows that the market price per share of three commercial banks with their average MPS as well as the standard deviation and coefficient of variance of MPS of those banks over the year 2005/06 to 2009/10.

From the above table we can see that highest MPS is Rs 6830 in 2007/08 of SCBL whereas the lowest MPS is Rs 816 in 2009/10 of HBL during the study period. From 2005/06 to 2007/08 MPS of each bank had increased than after all three banks have decreased their market value per share. SCBL has the highest average MPS (i.e. 5158.8) whereas BOK has the lowest average MPS (i.e. Rs 1448) during the study period. It indicates that the SCBL has high rate of share price in the secondary market.

According to standard deviation, SCBL has the highest S.D (1379.52) whereas HBL has the lowest S.D (443.01). Thus, the risk of SCBL is higher than HBL and BOK to invest in share but other two banks have also high S.D, it show that there is also a risk to invest in their shares.

Similarly, coefficient of variation of BOK has higher than SCBL and BOK. It shows that BOK has high level of it's share price in secondary market.

4.2.4 Dividend Payout Ratio (DPR)

Dividend Payout ratio is the proportion of earning paid in the form of dividend. It shows what percentage of profit distributed as dividend and what percentage is retained as reserve and surplus. DPR is calculated by dividing dividend per share by earning per share. The dividend payout ratio (DPR) of the banks under study is tabulated as follows:

Table no: 4.4
Dividend Payout Ratio of Respective Banks

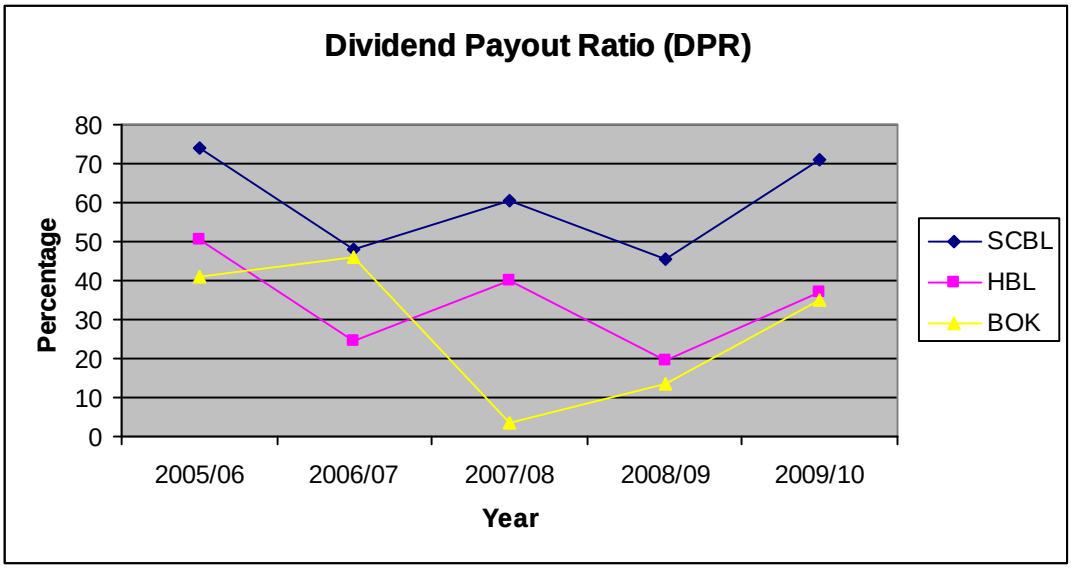
(in percentage)

Year	SCBL	HBL	BOK
2005/06	73.93	50.64	41.22
2006/07	47.80	24.73	45.98
2007/08	60.64	39.85	3.52
2008/09	45.46	19.39	13.48
2009/10	70.83	37.23	34.82
Average $(\bar{x})$	59.73	34.37	27.8
S.D (¢)	11.59	11.14	16.46
C.V %	19.40	32.42	59.21

Source: Appendix I (D)

The dividend payout ratio (DPR) of the banks under study is presented in graphical forms as below.

Figures no:4.4



The above table (Table no 4.4) shows the dividend payout ratio of three commercial banks with their average DPR as well as the standard deviation and coefficient of variation of DPR of those banks over the year 2005/06 to 2009/10. Before analyzing the DPR, we can segregate the DPR of those banks in to three different categories policy.

Policy		DPR
Conservative Dividend Policy	→	Less than 20%
Moderate Dividend Policy	→	20% to 50%
Aggressive Dividend Policy	→	More than 50%

The above table shows that SCBL has the highest DPR (i.e. 73.93%) in 2005/06 whereas BOK has the lowest DPR (i.e. 3.52%) in 2007/08 during the study period. It shows that SCBL applied aggressive dividend policy but BOK applied conservative dividend policy. In average of DPR, here also SCBL has the highest DPR (i.e. 59.73%) whereas BOK has the lowest average DPR (i.e. 27.8%) than other banks. In average of DPR, SCBL applied aggressive dividend policy or pays more part of earnings as dividend and BOK & HBL applied moderate dividend policy.

According to standard deviation analysis, BOK has the highest S.D and HBL has the lowest S.D. Similarly, coefficient of variation of BOK has the highest (i.e. 59.21%) and SCBL has the lowest (i.e. 19.40%) C.V. It indicates that BOK has a high level of fluctuation in dividend payment policy whereas SCBL has consistency in dividend payment policy.

4.2.5 Price- Earning Ratio (P/E ratio)

Price earning Ratio establishes the relationship between market price per share and earning per share. It is generally expressed in times. P/E ratio is an important measure of performance for the company in that they reflect the combined influence of return and return ratio. The price earning ratio (P/E ratio) of the banks under study are tabulated as follows

Table no:4.5

Price Earning Ratio of Respective Banks

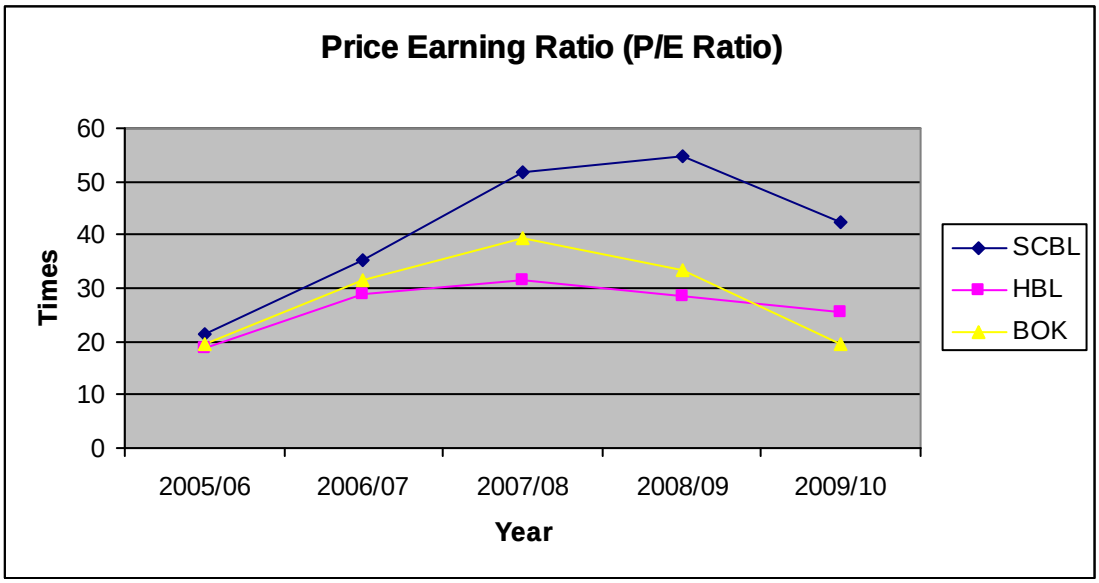
(in times)

Year	SCBL	HBL	BOK
2005/06	21.47	18.57	19.46
2006/07	35.25	28.69	31.61
2007/08	51.77	31.56	39.21
2008/09	54.64	28.43	33.37
2009/10	42.23	25.66	19.50
Average $(\bar{x})$	41.07	26.58	28.63
S.D (¢)	11.98	4.42	7.88
C.V %	29.17	16.63	27.52

Source : Appendix I (E)

The price earning ratio (P/E ratio) of the banks under study are presented in graphical form as below

Figure no: 4.5



The above table (Table no 4.5) shows the price earning ratio of three commercial banks with their average P/E ratio as well as standard deviation and coefficient of variation of P/E ratio of those banks over the year 2005/06 to 2009/10.

From the above table we can see that SCBL has the highest P/E ratio (i.e. 54.65 times). The P/E ratio of SCBL had increased from 2005/06 up to 2008/09 than after decreased and HBL has the lowest P/E ratio (i.e. 18.57) in 2005/06 then after increased up to 2007/08 comparing with average P/E ratio, here also SCBL has the highest P/E ratio (i.e. 41.07 times) whereas HBL has the lowest P/E ratio (i.e. 21.58 times) during the study period.
According the standard deviation the highest S.d of P/E ratio is 11.98 times of SCBL and lowest S.d of P/E ratio is 4.42 times of HBL.

Similarly, SCBL has the highest coefficient of variation (i.e. 29.17%) whereas HBL has the lowest coefficient of variation (i.e. 4.42%). Then we can say that HBL has more consistency of P/E ratio than other banks during the study period.

4.2.6 Dividend Yield (DY)

Dividend yield is a percentage of dividends Per Share on market price per share. It measures the dividend 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 dividend yields (DY) of the banks under the study are tabulated as follows:

Table no: 4.6
Dividend Yield of Respective Banks

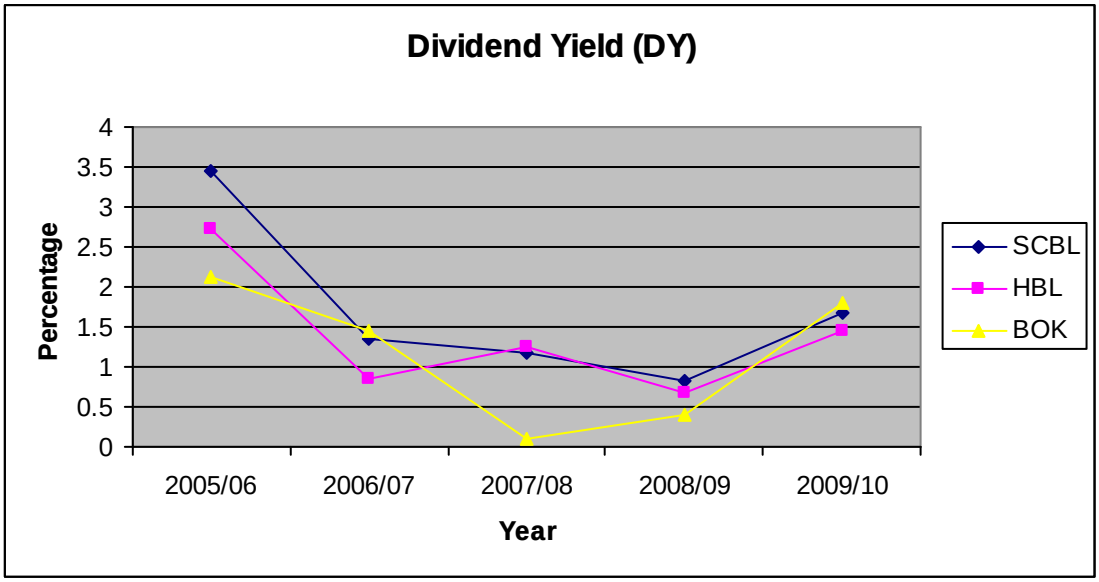
(in percentage)

Year	SCBL	HBL	BOK
2005/06	3.44	2.73	2.12
2006/07	1.36	0.86	1.45
2007/08	1.17	1.26	0.09
2008/09	0.83	0.68	0.40
2009/10	1.68	1.45	1.79
Average $(\bar{x})$	1.70	1.40	1.17
S.D (¢)	0.91	0.72	0.79
C.V %	77.78	51.43	67.52

Source: Appendix I (F)

The dividend (DY) of the banks under the study are presented in the graphical forms are below:

Figure no:4.6



The above table (Table no: 4.6) shows the dividend yield of three commercial banks with their average dividend yield as well as standard deviation and coefficient of variation of dividend yield of those banks over the year 2005/06 to 2009/10.

From the above table, we can see that SCBL has the highest dividend yield (i.e. 3.44) in 2005/06 than after start to decreased up to 2008/09. Whereas BOK has the lowest dividend yield (i.e. 0.09) in 2007/08. The dividend yield of BOK had decreased from 2005/06 up to 2007/08 and HBL had decreased from 2005/06 up to 2008/09 then after dividend yield start to increase up to now. Comparing with average dividend yield, here also SCBL has the highest dividend yield (i.e. 1.70) whereas BOK has the lowest dividend yield (i.e. 1.17) during the study period.

According to analysis of standard deviation SCBL has the highest S.d (i.e. 0.91) whereas the HBL has the lowest S.d (i.e. 0.72) than other banks.
Similarly, SCBL has the highest coefficient of variance (i.e. 77.78%) and HBL has the lowest coefficient of variance (i.e. 51.43%). It shows that SCBL has the high level of fluctuation in dividend yield.

4.3 Statistical Analysis

Statistical analysis is based on statistics tools. It helps to estimate a good estimator of population parameters to predict the future outcomes i.e. to established relationship correlation between EPS and DPS, EPS and MPS & DPS and MPS in the case of three commercial banks under the study. For the purpose all of three banks for the sample study, correlation of coefficient have been computed as well as simple regression of DPS on EPS, MPS on EPS and MPS on DPS also have been computed in this research. In addition, student t-value have been computed to test the statistical significance of regression analysis. Again in addition "Analysis of variation" using ANOVA technique. We find out established hypothesis statement used to show the relationship between variable. Analyses of variation, F-value have been calculated to test the statistical significance in concerned three banks at 5% level of significance.

4.3.1 Correlation Analysis

Correlation analysis is the statistical tools that we can used to describe the degree to which one variable is linearly related to each other. The sufficient of correlation measures the degree of relation between two sets of figures. In this study simple coefficient of correlation is used to determine the relationship of different factor with dividend and other variable. The data related to dividend over five years are tabulated and their relationship with each other is drawn out as follows:

4.3.1.A. Correlation Between EPS and DPS

Table no: 4.7
Correlation Between EPS and DPS of Respective Banks

Banks	Correlation of coefficient (r)	Relationship	Coefficient of Determination (r^2)	6P.E	Significant / Insignificant
SCBL	0.56	Positive	0.31	1.26	insignificant
HBL	0.43	Positive	0.18	1.50	insignificant
BOK	-0.97	Negative	0.94	0.12	insignificant

Source: Appendix –II(A)

The above table (Table no: 4.7) shows the relationship between EPS and DPS of three banks. The correlation of coefficient (r) between EPS and DPS of SCBL, HBL and BOK are 0.56, 0.43 and -0.97 respectively. The figure

clearly implies that SCBL and HBL have positive correlation between EPS and DPS. It indicates that if the value of EPS increased, then the value of DPS increased and vice-versa for SCBL and HBL. In another hand BOK has negative correlation between EPS & DPS . It indicate that the value of EPS increased, then the value of DPS decreased and vice- versa.

Similarly, the coefficient of determination (r^2) of SCBL is 0.31 which indicates that 31% of total variation in the value of the dependent variable DPS has been explained by the independent variable EPS or 31% of variation is explained in the depended variable DPS due to change in the value of independent variable EPS. The coefficient of determination $(r^2)$of HBL is 0.43, which indicates that 43% of total variation in the value of the dependent variable DPS has been explained by the independent variable EPS and the coefficient of determination (r^2) of BOK is 0.94, which indicates that 94 % of total variation in the value of the dependent variable DPS has been explained by the independent variable EPS.

In the case of all three banks, the correlation of coefficient (r) appears to be less than 6PE. So the relationship between EPS and DPS is insignificant which implies that there is no evidence of correlation between EPS and DPS or the increase or decrease in DPS doesn't depend upon the EPS.

4.3.1. B. Correlation Between EPS and MPS

Table no: 4.8
Correlation between EPS and MPS of Respective Banks

Banks	Correlation of coefficient (r)	Relationship	Coefficient of Determination (r^2)	6P.E	Significant / Insignificant
SCBL	0.19	Positive	0.04	1.74	insignificant
HBL	0.81	Positive	0.66	0.60	significant
BOK	0.94	Positive	0.88	0.24	significant

Source: Appendix –II(B)

The above table (Table no: 4.8) shows the relationship between EPS and MPS of three banks. The correlation of coefficient (r) between EPS and MPS of SCBL, HBL and HBL are 0.19, 0.81 and 0.94 respectively. The figure clearly implies that all banks have positive correlation between EPS

and MPS. It indicates that the value of EPS increased, then the value of MPS also increased and vice-versa.

Similarly, the coefficient of determination (r^2) of SCBL is 0.04, which indicates that 4% of total variation in the value of dependent variable MPS has been explained by the independent variable EPS. The coefficient of determination $(r^2)$of HBL is 0.66 which indicates that 66% of the total variation in the value of dependent variable MPS has been explained by the independent variable EPS and the coefficient of determination $(r^2)$of BOK is 0.88, which indicates that 88% of the total variation in the value of the dependent variable MPS has been explained by the independent variable EPS.

In the case of SCBL, the correlation of coefficient (r) appears to be less than 6PE, So the relationship between EPS and MPS of SCBL is insignificant which implies that there is no evidence of correlation between EPS and MPS or increase or decrease in MPS doesn't depend upon the EPS. Whereas, in the case of HBL and BOK, the correlation of coefficient (r) appears to be greater than 6PE, so the relationship between EPS and DPS of HBL and BOK is significant, which implies that there is no evidence of correlation between EPS and MPS or increase or decrease in MPS depends upon the EPS.

4.3.1. C. Correlation Between DPS and MPS

Table No: 4.9
Correlation Between DPS and MPS of Respective Banks

Banks	Correlation of coefficient (r)	Relationship	Coefficient of Determination (r^2)	6P.E	Significant / Insignificant
SCBL	-0.24	Negative	0.06	1.68	insignificant
HBL	0.04	Positive	0.0016	1.80	significant
BOK	-0.85	Negative	0.72	0.48	significant

Source: Appendix –II (C)

The above table (Table no: 4.9) shows the relationship between DPS and MPS of three banks. The correlation of coefficient between DPS and MPS of SCBL, HBL and BOK are 0.24, 0.04 and -0.85 respectively. The figure clearly implies that HBL has positive correlation between DPS and MPS. It indicates that if the value of DPS increases, then the value of MPS also increased and vice versa. For HBL, in another hand SCBL and BOK has negative between DPS and MPS. It indicates that if the value of DPS increases, then the value of MPS decreased and vice-versa.

Similarly, the coefficient of determination (r^2) of SCBL is 0.06, which indicates that 6% of total variation in the value of the dependent variable MPS has been explained by the independent variable DPS. The coefficient of determination of HBL is 0.0016, which indicates that 1.6% of total variation in the value of dependent variable MPS has been explained by the determination variable DPS and the coefficient of determination $(r^2)$of BOK is 0.72, which indicates that 72% of total variation in the value of dependent variable MPS has been explained by the independent variable DPS.
In the case of all three banks, the correlation of coefficient of (r) appears to be less than 6P.E. So the relationship between DPS and MPS is insignificant which implies that there is no evidence of correlation between DPS and MPS or increase or decrease in MPS doesn't depend upon the DPS.

4.3.2 Simple Regression Analysis

Literal meaning of regression is stepping or returning back to the original position. The theory or regression analysis was first developed by Sir F. Golton. Regression analysis is used as a tool of determining the strength of relationship between two variables. Thus it is a statistical device, with the help of which, we can estimate or predict the value of one variable when the value of other variable is known. The unknown variable which we have to predict is called dependent variable and the variable whose value is known is called independent variable. The analysis used to describe the average relationship between two variables is known as simple linear regression analysis.

4.3.2. A. Simple Regression Analysis Between DPS on EPS

Table no: 4.10
Simple Regression Analysis Between DPS on EPS of Respective Banks

Banks	No of Years	Constant (a)	Regression Coefficient (b)	S.E.E	T- value	Significant of T-value at 5%
SCBL	5	-5.84	0.64	21.02	2.46	Not significant
HBL	5	3.58	0.27	8.6	0.82	Not significant
BOK	5	58.04	-0.93	2.23	-6.64	Not significant

Source: Appendix –II (A)

The above table (Table no 4.10) shows that simple regression analysis between DPS on EPS of three commercial banks. It helps us to find out the mathematical equation that relates to dependent variable (DPS) with the independent variable (EPS). The simple regression of DPS on EPS is expressed as,

$Y = a + bx$

Let, the dependent variable DPS is denoted by Y and independent variable EPS is denoted by X, then the equation is

$DPS = a + bx$

Now,

$DPS_{SCBL} = -5.84+0.64\ EPS_{SCBL}$

$DPS_{HBL} = 3.58+0.27\ EPS_{HBL}$

$DPS_{HBL} = 58.04-0.93\ EPS_{BOK}$

From the above table, the regression coefficient (beta coefficient) of SCBL is 0.64, which indicates that one rupee increase in independent variable (EPS) leads to average Rs 0.64 increase in dependent variable (DPS), if the constant (a) -5.84 remain same. The regression coefficient (beta coefficient) of HBL is 0.27, which indicate that one rupee increase in independent variable (EPS) leads to average Rs. 0.27 increase in dependent variable (DPS) if the constant (a) 3.56 remain same. Again, the regression coefficient (beta coefficient) of BOK is -0.93, which indicate that one rupee increase in

independent variable (EPS) leads to average Rs. 0.93 decrease in dependent variable (DPS), if the constant (a) 58.04 remain same.

The standard error of estimate (S.E.E.) of SCBL, HBL and BOK are 21.02, 8.6 and 2.23 respectively. These value indicates that the probable error in the predicted value for the respective banks. Here, the lowest S.E.E. is 2.23 of BOK. It indicates that the estimation of EPS can be predicted nearly to accuracy.

Similarly, the calculated T-value of SCBL (2.46) is less than the tabulated T-value of SCBL (2.78) at 5% level of significant for 4 degree of freedom. So the result is statistically not significant. The calculated T- value (0.82) of HBL is less than the tabulated t-value (2.78) at 5 % level of significance for 4 degree of freedom. So the result is satisfactory not significant. Again, the calculated T-value (-6.64) of BOK is less than the tabulated t-value (2.78) at 5% level of significant for 4 degree of freedom. So the result is statistically not significant.

4.3.2. B. Simple Regression Analysis Between MPS on EPS

Table no: 4.11

Simple Regression Analysis Between MPS on EPS of Respective Banks

Banks	No of Years	Constant (a)	Regression Coefficient (b)	S.E.E	T-value	Significant of T-value at 5%
SCBL	5	4180.51	7.38	1746.99	0.34	Not significant
HBL	5	-195.48	30.30	338.31	2.36	Not significant
BOK	5	-2379.01	78.15	248.88	4.92	Significant

Source: Appendix-II (B)

The above table (Table no: 4.11) shows the regression analysis between MPS on EPS of three commercial banks. It helps us to find out the mathematical equation that relates to dependent variable (MPS) with the independent variable (EPS). The simple regression of MPS on EPS is expressed as :

$$Y = a + bx$$

Let, the dependent variable MPS is denoted by Y and independent variable EPS is denoted by X, then the equation is

$MPS = a + b_{EPS}$

Now

$MPS_{SCBL} = 4180.51 + 7.38\ EPS_{SCBL}$

$MPS_{HBL} = -195.48 + 30.30\ EPS_{HBL}$

$MPS_{BOK} = -2379.01 + 78.15\ EPS_{BOK}$

From the above table, the regression coefficient (beta coefficient) of SCBL is 7.38, which indicates that one rupee increase in independent variable (EPS) leads to average Rs 7.38 increase in dependent variable (MPS), if the constant (a) 4180.51 remain same. The regression coefficient (beta coefficient) of HBL is 30.30, which indicates that one rupee increase in independent variable (EPS) leads to average Rs 30.30 increase in dependent variable (MPS), if the constant (a) -195.48 remain same. Again, the regression coefficient (beta coefficient) of BOK is 78.15 ,which indicates that one rupee increase in dependent variable (EPS) leads to average Rs 78.15 increase in dependent variable (MPS), if the constant (a) -2379.01 remain same.

The standard error of estimate (S.E.E) of SCBL, HBL and BOK are 1746.99, 338.31 and 248.88 respectively. These values indicate the probable error in predicted value for the respective banks. Here, the lowest S.E.E is 248.88 of BOK. It indicates that the estimation of EPS can be predicted nearly to accuracy than other banks.

Similarly, the calculated T- value of SCBL (0.34) is less than the tabulated T-value (2.78) at 5% level of significance for 4 degree of freedom. So the result is statistically not significant. The calculated T-value (2.36) of HBL is less than tabulated T-value (2.78) at 5% level of significance for 4 degree of freedom .So the result is statistically not significant. Again, the calculated T-value (4.92) of BOK is higher than the tabulated T- value (2.78) at 5% level of significance for 4 degree of freedom. So the result is statistically significant.

4.3.2. C. Simple Regression Analysis Between MPS on DPS

Table no: 4.12
Simple Regression Analysis between MPS on DPS of Respective Banks

Banks	No of Years	Constant (a)	Regression Coefficient (b)	S.E.E	T-value	Significant of T-value at 5%
SCBL	5	6096.53	-11.87	1337.82	-0.58	Not significant
HBL	5	1439.78	2.1	571.59	0.06	Not significant
BOK	5	236.55	-73.46	392.93	-2.81	Not significant

Source: Appendix II (C)

The above table (Table no: 4.12) shows the regression analysis between MPS on DPS of three commercial banks. It helps us to find out the mathematical equation that relates to dependent variable (MPS) with the independent variable (DPS).The simple regression of MPS on DPS is expressed as,
$Y= a +bx$

Let the dependent variable MPS is denoted by Y and independent variable DPS is denoted by X, then the equation is
MPS = a+ b DPS

Now

$MPS_{SCBL} = 6096.53 -11.87\ DPS_{SCBL}$
$MPS_{HBL} = 1439.78 + 2.1\ DPS_{HBL}$
$MPS_{BOK} = 236.55-73.46\ DPS_{BOK}$

From the above table, the regression coefficient (beta coefficient) of SCBL is -11.87, which indicates that one rupee increase in independent variable (DPS) lead to average Rs 11.87 decrease in dependent variable (MPS), if the constant (a) 6096.58 remain same.

The regression coefficient (beta coefficient) of HBL is 2.1, which indicates that one rupee increase in independent variable (DPS) leads to average Rs 2.1 increase in dependent variable (MPS), if the constant (a) 1439.78 remain

same. Again, the regression coefficient (beta coefficient) of BOK is -73.46, which indicates that one rupee increase in independent variable (DPS) leads to average Rs 73.46 decrease in dependent variable (MPS), if the constant (a) 236.55 remain same.

The standard error of estimate (S.E.E) of SCBL, HBL and BOK are 1337.82, 571.59 and 392.93 respectively .These value indicates that the probable error in predicted value for the respective banks. Here, the lowest S.E.E. is 392.93 of BOK. It indicates that the estimation of DPS can be predicted nearly to accuracy than other banks.

Similarly, the calculated T- value of SCBL (-0.58) is less than the tabulated T-value (2.78) at 5% level of significant for 4 degree of freedom. So the result is statistically not significant. The calculated T-value (0.06) is less than the tabulated T-value (2.78) at 5% level of significant for 4 degree of freedom. So the result is statistically not significant. Again, the calculated T-value (-2.81) is less than the tabulated T-value (2.78) at 5% level of significance for 4 degree of freedom. So these result also statistically not significant.

4.3.3 Test of Hypothesis

Statements of the relationship between two or more variable is called hypothesis. Hypothesis statements should be able to show the relationship between the variable. At the same time, they should carry clean implications for testing the stated relations .The reasons on the thesis topic strongly holds the hypothesis criteria. Due to the more than two samples F-test is done to find out uniformity of EPS, DPS and MPS.

4.3.3. A First Hypothesis Test

Null Hypothesis (Ho): $u_1 = u_2 = u_3$ i.e. There is no significance difference in EPS of SCBL, HBL and BOK.

Alternative Hypothesis (H_1): $u_1 \neq u_2 = u_3$ i.e., there is significance difference in EPS of SCBL, HBL and BOK.

Table no: 4.13
One way ANOVA Table

Sources of Variation	Degree of Freedom	Sum of square	Mean sum of square	F- ratio
Between Sample	3-1=2	SCC= 21663.92	MSC = $\frac{21663.92}{2}$ =10831.96	F= $\frac{MSC}{MSE}$
Within Sample	15-3=12	SSE= 101004.81	MSE= $\frac{101004.81}{12}$ =8417.07	$\frac{10831.96}{8417.07}$ =1.29
Total	15-1=14			

Source: Appendix III

Critical Value of degree of freedom (df) is, $C-1(V_1)=2$ and $N-C(V_2)=12$
$\therefore$ Table value of 'F' at 5% level of significance with V_1=2 and V_2= 12 is 3.49

Decision: Since the calculated value of 'F' (i.e. $F_{cal}=1.29$) is less than the tabulated value of 'F' (i.e. $F_{tab}=3.49$) at 5% level of significance i.e. $F_{Cal} < F_{tab}$. Hence, Null hypothesis (Ho) is accepted. So, we may conclude that there is no significance difference in EPS of SCBL, HBL and BOK.

4.3.3.B. Second Hypothesis Test

Null Hypothesis (Ho): $u_1 = u_2 = u_3$ i.e. There is no significance difference in DPS of SCBL, HBL and BOK.

Alternative Hypothesis(H_1): $u_1 \neq u_2 = u_3$ i.e., There is significance difference in DPS of SCBL, HBL and BOK.

Table no: 4.14
One Way ANOVA Table

Sources of Variation	Degree of Freedom	Sum of square	Mean sum of square	F- ratio
Between Sample	3-1=2	SCC= 13483.36	MSC = $\frac{13483.36}{2}$ =6741.68	F= $\frac{MSC}{MSE}$
Within Sample	15-3=12	SSE= 24783.60	MSE= $\frac{24783.60}{12}$ =2065.30	$\frac{6741.68}{2065.30}$ =3.26
Total	15-1=14	38266.96		

Source: Appendix IV

Critical Value of degree of freedom (d. f) is $C-1(V_1)=2$ and $N-C(V_2)=12$
$\therefore$ Table value of 'F' at 5% level of significance with V_1=2 and V_2= 12 is 3.49

Decision: Since the calculated value of 'F' (i.e. $F_{cal}=3.26$) is less than the tabulated value of 'F' (i.e. $F_{tab}=3.49$) at 5% level of significance i.e. $F_{Cal} < F_{tab}$. Hence, Null hypothesis (Ho) is accepted. So, we may conclude that there is no significance difference in MPS of SCBL, HBL and BOK.

4.3.3. C. Third Hypothesis Test

Null Hypothesis (Ho): $u_1 = u_2 = u_3$ i.e. There is no significance difference in MPS of SCBL, HBL and BOK.

Alternative Hypothesis (H_1): $u_1 \neq u_2 = u_3$ i.e., There is significance difference in MPS of SCBL, HBL and BOK.

Table no: 4.15
One Way ANOVA Table

Sources of Variation	Degree of Freedom	Sum of square	Mean sum of square	F- ratio
Between Sample	3-1=2	SCC= 45517443.70	MSC= $\frac{45517443.70}{2}$ =22758721.85	F= $\frac{MSC}{MSE}$ $\frac{22758721.85}{10096444.03}$ =2.25
Within Sample	15-3=12	SSE= 121157328.30	MSE= $\frac{121157328.30}{12}$ =10096444.03	
Total	15-1=14	1266674772		

Source: Appendix V

Critical Value of degree of freedom (d. f) is $C-1(V_1)=2$ and $N-C(V_2)=12$
$\therefore$ Table value of 'F' at 5% level of significance with V_1=2 and V_2= 12 is 3.49

Decision: Since the calculated value of 'F' (i.e. $F_{cal}=2.25$) is less than the tabulated value of 'F' (i.e. $F_{tab}=3.49$) at 5% level of significance i.e. $F_{Cal} < F_{tab}$. Hence, Null hypothesis (Ho) is accepted. So, we may conclude that there is no significance difference in MPS of SCBL, HBL and BOK

4.4 Major Findings

The major findings of this study can be summarized as follows:

- The analysis of EPS shows that SCBL has the highest EPS but in decreasing way and HBL has the lower EPS. The average EPS shows that the earning position of SCBL is better than other two banks and BOK has the lower average EPS during the study period. Similarly, BOK has the lowest S.D and C.V. It shows that the BOK has low risk and more consistency in EPS among the banks.

- The analysis of DPS shows that SCBL has the highest DPS but in decreasing way and BOK has the lowest DPS. The average DPS shows that SCBL has the satisfactory level as it has distributed it's dividend than other two banks and BOK has the lowest average DPS during the study period. Similarly, BOK has the lowest S.D and HBL has the lowest C.V. It indicates that BOK has low risk and HBL has more consistency in paying dividend among the banks.

- The analysis of MPS shows that SCBL has the highest MPS and HBL has the lowest MPS. The average MPS shows that SCBL has high rate of share price in secondary market and BOK has the lowest average MPS in secondary market. Similarly, HBL has the lowest S.D and C.V. It indicates that HBL has the low risk and more consistency in MPS among the banks.

- The analysis of DPR shows that the SCBL has the highest DPR and BOK has the lowest DPR. The average DPR of SCBL shows that SCBL has applied aggressive dividend policy or pay more part of earning as dividend to it's shareholders. Whereas HBL & BOK applied moderate dividend policy during the study period. Similarly, HBL has the lowest S.D and Bok has the highest C.V. It indicates that the BOK has a high level of fluctuation in dividend payment policy among the banks.

- The analysis of P/E ratio shows that SCBL has highest P/E ratio and HBL has lowest P/E ratio. Average P/E ratio of SCBL looks better than other two banks and HBL has the lowest P/E ratio during the study period. Similarly, HBL has the lowest S.D and C.V. It indicates

that HBL has low risk and more consistency of P/E ratio among the banks.

- The analysis of dividend yield shows that SCBL has the highest dividend yield and BOK has the lowest dividend yield .The average dividend yield of SCBL shows that dividend gain to shareholder is higher in comparison to HBL & BOK. Similarly, HBL has lowest S.D and C.V. It indicates that HBL has low risk and more consistency in case of dividend yield among the banks.

- The correlation coefficient analysis indicates that the relationship between EPS and DPS of SCBL and HBL have positive relationship whereas BOK has negative relationship. In case of all three banks, the correlation of coefficient (r) appears to be less than 6P.E. Thus, the relationship between EPS and DPS is significance.

- The correlation coefficient analysis indicates that the relationship between EPS and MPS of all banks have positive relationship. In case of SCBL, the correlation of coefficient (r) appears to be less than 6P.E. Thus the relationship between EPS and MPS of SCBL is insignificance but the correlation of coefficient (r) of HBL & BOK appears to be greater than 6PE. Thus the relationship between EPS and MPS of HBL and BOK is significance.

- The correlation coefficient analysis indicates that the relationship between DPS and MPS of HBL has positive relationship whereas SCBL and BOK has negative relationship. In case of all three banks, the correlation of coefficient (r) appears to be less than 6PE. So the relationship between DPS and MPS is insignificance.

- The regression line of DPS on EPS, the beta coefficient of SCBL and HBL is positive which indicates that increase in EPS cause the increase in DPS whereas the beta coefficient of BOK is negative which indicates that increase in EPS cause the decrease in DPS. Similarly HBL has the lowest standard error of estimate (S.E.E). It indicates that the estimation of EPS can be predicted nearly to accuracy among the banks. The T- value of SCBL, HBL and BOK is

less than the tabulated T- value at 5% level of significance for 4 degree of freedom .So, all the banks are statistically not significance.

- The regression line of MPS on EPS, the beta coefficient of all three banks are positive which indicates that increase in EPS cause increase in EPS cause increase in MPS. Similarly, BOK has the lowest standard error or estimate (S.E.E). It indicates that the estimation of EPS can be predicted nearly accuracy among the bank. The T- value of SCBL, HBL and BOK is less than the tabulated T- value at 5% level of significance for 4 degree of freedom. So all banks are statistically not significance.

- The regression line of MPS on DPS ,the beta coefficient of HBL has positive, which indicate that increase in DPS cause the increase in MPS whereas the beta coefficient of SCBL and BOK have negative ,which indicate increase in DPS cause the decrease in MPS of these banks. Similarly, BOK has the lowest standard error of estimate (S.E.E). It indicate that estimation of DPS can be predicted nearly to accuracy among the banks. The T- value of SCBL, HBL and BOK is less than the tabulated T-value at 5 % level of significance for 4 degree of freedom. So, all banks are statistically not significance.

- Test of Hypothesis (F-test) on EPS shows that null hypothesis (Ho) is accepted, which mean there is no significance difference in EPS of SCBL, HBL and BOK.

- Test of Hypothesis (F-test) on DPS shows that null hypothesis (Ho) is accepted, which means that there is no significance difference in DPS of SCBL, HBL and BOK.

- Test of hypothesis (F-Test) on MPS shows that null hypothesis (Ho) is accepted, which mean there is no significance difference in MPS of SCBL, HBL and BOK.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents summary, conclusion and recommendation. This chapter focuses on summarizing the study held with the researchers analysis also helps to show dividend policy of different banks taking reference these sample banks. It may helps in the practices of dividend policy and to format new policy in the future. This study is depend only on secondary data of three sample banks and focus on some selected action oriented findings summary, concluding and recommendation on the basis of analysis.

5.1 Summary

Dividend policy is one of the most important decisions, which play vital role in financial sector. In any firm, dividend policy is taken as major financial decision, which affect the value of the firm. Dividend refers to that portion of earning of a firm that is distributed to shareholders in return to their investment in the shares. Dividend policy may be defined as the way of action corporations with regard to providing returns to the investors in return to their investment in shares. Corporate sector is small and it is at early stage of growth in Nepal. This sector has shown now momentum in the sense that a number of public limited commercial banks are coming up in the capital market.

This study basically attempts to go through "A comparative Analysis on Dividend Policy of Nepalese Commercial Banks". For this purpose, three commercial banks i.e. SCBL, HBL and BOK are taken under consideration. This research work is divided in five chapter consisting Introduction, Review of literature, Research Methodology, Presentation and Analysis of Data and Summary, Conclusion and Recommendation.

The first chapter introduction contents are Background of the study, Brief Profile of Sample Banks, Focus of the study, Statement of the problem, objective of the study, Significance of the study, Limitation of the study and organization of the study. This chapter highlights on what the study is?

The second chapter of this study basically has thrown lights on the theoretical aspects of the dividend policy. I.e. literally what we should understand term dividend policy. It contents are conceptual framework:

Major forms of dividend, payment procedure of dividend, dividend payout schemes, factor influencing dividend policy and legal provision regarding dividend practices in Nepal. Similarly, review of major international studies, review of major studies in Nepal and review of previous master's thesis.

The third chapter focuses to remain within the parameter of dealings a various mathematical, financial and statistical tools which would be applied to generate concrete conclusions in connection to the study concerned. It contents are Introduction, Research design, Population and sample, Nature and sources of data, Data processing procedure and Data analysis tools: Financial tools & Statistical tools.

In the fourth chapter, various conclusions are carried out. The calculation is based on descriptive analysis such as EPS, DPS, MPS, DPR, P/E ratio and dividend yield. In inferential analysis correlation between EPS and DPS, EPS and MPS & DPS and MPS. Similarly, simple regression of DPS on EPS, MPS on EPS and MPS on EPS and test of hypothesis (F-test) with analysis of various along with major finding of three sample banks. In fact, this is the core on to reach to the objectives of this research.

5.2 Conclusion:

From the analysis of financial and statistical tools of sample banks, following conclusions are drawn.

- Dividend policy doesn't seem stability and consistency of all sample banks. There is large fluctuation in dividend payment in each year. These banks don't have any strategic dividend policy and criteria for paying dividend. There is lack of rules and regulation that banks pays dividend every year.

- The market price per share (stock price) is moderately affected by the dividend related financial variable such as EPS, DPS etc, either positively or negatively. The change of DPS affects the stock price differently in different banks. HBL has positive correlation between DPS and MPS. It indicate that if the value of DPS increase than the value of MPS also increase but SCBL and BOK have negative correlation between DPS & MPS. It indicate that if the value of DPS increases than the value of MPS decreases

- The analysis of regression line of MPS on DPS also shows the regression coefficient (beta coefficient)of HBL has positive, which indicate that

increase in DPS cause the increase in MPS whereas the regression coefficient (beta coefficient) of SCBL and BOK have negative, which indicate that increase in DPS cause the decrease in MPS.

- Analysis of DPR shows that SCBL, HBL and BOK have average DPR of 59.73%, 34.37 % and 27.8% respectively. It indicates that SCBL applied aggressive dividend policy or pays more part of earnings as dividend to its shareholders but HBL and BOK applied moderate dividend policy.

- The coefficient of variation (C.V) of average DPR indicates that there is fluctuation in the payment of dividend. C.V of SCBL, HBL and BOK have 19.04 %, 32.42% and 59.21% respectively which means BOK have a high level of fluctuation in dividend policy whereas SCBL has consistency in dividend payment policy among the banks. So we may conclude the dividend policy of the banks are not stable.

- The investor of SCBL are investing higher amount in the secondary market than that of other sample banks in order to gain per rupee earning. So we may conclude that SCBL has higher earning capacity and paying more dividend than other sample banks. SCBL remained more successful among the banks in satisfying it's shareholder through distributing cash dividend.

- The Nepalese stock market does not seems to be rational on this ground .The rise in MPS is largely depended upon the investor's behavior rather than the firms performance. It may be due to the present instable position of the country, which lacks better investing opportunities for investors.

5.3 Recommendation

Based on the above analysis and studying the following suggestions are recommendation for improving their financial performance to the concerned parties.

- There is inconsistency in dividend payment because ,there is lack of proper legal provision regarding the dividend payment .The government as well as central banks of Nepal (Nepal Rastra Bank) should pay their attention in this matter for prescribing certain provision and rules and regarding the percentage earning as payment of dividend.

- Banks are paying dividend without adopting any appropriate policy. It seems impossible to increase shareholders wealth. Banks are advised to adopt fixed dividend policy to boost up the wealth of shareholders.

- Commercial banks in Nepal are not distributing the portion of earnings as dividends with considering the liquidity position. They might face cash crisis. So, care should be taken. Liquidity position while taking the dividend policy decision.

- Most of the sample banks have great fluctuation in terms of coefficient of variation (CV) of EPS, DPS, MPS, DPR, P/E ratio and Dividend Yield. Such fluctuation increases the rise factor among the investors. Therefore, the banks should take necessary steps towards bringing consistency in these factors.

- Management is the agent of shareholder; therefore management must have accountable towards shareholders. Management of financial institution must have to change their attitude and have to think how they can maximize the wealth of shareholders.

- Dividend affects individual shareholder on the one hand and the whole economic development of the nation, on the another hand. Hence, it may be pertinent to suggest the researcher of finance to develop on the subject of dividend and it is hoped that present study helps them.

- The analysis clearly shows that insignificant relationship between MPS and other variable incase of sample banks. But the investment in the stock of these banks is increasing trend. It mean the investors are making investment without considering the performance. This shows that the investors are not rational. So, they should understand the market condition and study the financial performance of the company.

- Finally, after making the study, it is realized that there is a necessary of legal provision and rules for prescribing certain policy regarding the dividend payment in the banking sectors .For this purpose the concerned authority i.e. Government, Nepal Rastra Bank, Nepal Stock Exchange and Security Board should be conscious about the formulation and implication of rule regarding dividend payment. This will help to regularize the dividend policy of financial sector in Nepal.

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APPENDIX -I (A)

Standard Deviation $(\pm)$ of EPS

$$\pm = \sqrt{\Sigma(X - \overline{X})^2}$$

For SCBL

$$\pm = \sqrt{\frac{\Sigma(175.84-132.55)^2 + (167.37-132.55)^2 + (131.92-132.55)^2 + (109.99-132.55)^2 + (77.65-132.55)^2}{5}}$$

$$= \sqrt{1321.96}$$

$$= 36.36$$

For HBL

$$\pm = \sqrt{\frac{\Sigma(59.24-55.27)^2 + (60.66-55.27)^2 + (62.74-55.27)^2 + (61.90-55.27)^2 + (3180-55.27)^2}{5}}$$

$$= \sqrt{143.83}$$

$$= 11.99$$

For BOK

$$\pm = \sqrt{\frac{\Sigma(43.67-48.97)^2 + (43.50-48.97)^2 + (59.94-48.97)^2 + (54.68-48.97)^2 + (43.98-48.97)^2}{5}}$$

$$= \sqrt{49.13}$$

$$= 7.01$$

Now,

Coefficient of variation (C.V) of EPS

$$C.V = \frac{\pm}{x} x100$$

For SCBL

$$C.V = \frac{36.36}{132.55} \times 100$$

$$= 27.43\%$$

For HBL

$$C.V = \frac{11.99}{55.27} \times 100$$

$$= 21.33\%$$

For BOK

$$C.V = \frac{7.01}{48.97} \times 100$$

$$= 14.31\%$$

APPENDIX – I (B)

Standard Deviation $(\pm)$ of DPS

For SCBL

$$\pm = \sqrt{\frac{\Sigma(130-79)^2 + (80-79)^2 + (50-79)^2 + (55-79)^2}{5}}$$

$= \sqrt{804}$

$= 28.35$

For HBL

$$\pm = \sqrt{\frac{\Sigma(30-18.77)^2 + (15-18.77)^2 + (25-18.77)^2 + (12-18.77)^2 + (11.84-18.77)^2}{5}}$$

$= \sqrt{54.6}$

$= 7.39$

For BOK

$$\pm = \sqrt{\frac{\Sigma(18-12.5)^2 + (20-12.5)^2 + (2.11-12.5)^2 + (7.37-12.55)^2 + (15.-12.77)^2}{5}}$$

$= \sqrt{45.40}$

$=6.74$

Now,

Coefficient of Variation (C.V) of DPS

For SCBL	**For HBL**	**For BOK**
C.V = $\frac{28.35}{79}$ x 100	C.V = $\frac{7.39}{18.77}$ x 100	C.V = $\frac{67.4}{12.5}$ x 100
= 35.89%	= 39.37	= 53.92%

APPENDIX –I (C)

Standard Deviation $(\pm)$ of MPS

For SCBL

$$\pm = \sqrt{\frac{\Sigma(3775-5158.80)^2+(5900-5158.80)^2+(6830-5158.80)^2+(6010-5158.80)^2+(3279-5158.80)^2}{5}}$$

$$= \sqrt{1903075.76}$$

$$= 1379.52$$

For HBL

$$\pm = \sqrt{\frac{\Sigma(1100-1479.20)^2+(1740-1479.20)^2+(1980-1479.20)^2+(1760-1479.20)^2+(816-1479.20)^2}{5}}$$

$$= \sqrt{196258.56}$$

$$= 443.1$$

For BOK

$$\pm = \sqrt{\frac{\Sigma(850-1448)^2+(1375-1448)^2+(2350-1448)^2+(1825-1448)^2+(840-1448)^2}{5}}$$

$$= \sqrt{337666}$$

$$= 581.09$$

Now,

Coefficient of variation (C.V) of MPS

For SCBL

$$C.V = \frac{1379.59}{5158.80} \times 100$$

26.74%

For HBL

$$C.V = \frac{443.01}{1479.20} \times 100$$

= 29.95%

For BOK

$$C.V = \frac{581.09}{1448} \times 100$$

= 40.13%

APPENDIX- I (D)

Standard Deviation $(\pm)$ of DPR

For SCBL

$$\pm = \sqrt{\frac{\Sigma(73.93-59.73)^2+(47.80-59.73)^2+(60.44-59.73)^2+(45.46-59.73)^2+(70.83-59.73)^2}{5}}$$

$$= \sqrt{134.33}$$

$$= 11.59$$

For HBL

$$\pm = \sqrt{\frac{\Sigma(50.64-34.37)^2+(24.73-34.37)^2+(39.85-34.37)^2+(19.39-34.37)^2+(37.23-34.37)^2}{5}}$$

$$= \sqrt{124.05}$$

$$= 11.14$$

For BOK

$$\pm = \sqrt{\frac{\Sigma(41.22-27.80)^2+(45.98-27.80)^2+(3.52-27.80)^2+(13.48-27.80)^2+(34.82-27.80)^2}{5}}$$

$$= \sqrt{270.89}$$

$$= 16.46$$

Now,

Coefficient of variation (C.V) of MPS

For SCBL	**For HBL**	**For BOK**
$C.V = \frac{11.59}{59.73} \times 100$	$C.V = \frac{11.14}{34.37} \times 100$	$C.V = \frac{16.46}{27.80} \times 100$
19.40%	= 32.42%	= 59.21%

APPENDIX- I (E)

Standard Deviation $(\pm)$ of P/E ratio

For SCBL

$$\pm = \sqrt{\frac{\Sigma(21.47-41.07)^2+(35.25-41.07)^2+(51.77-41.07)^2+(54.64-41.07)^2+(42.23-41.07)^2}{5}}$$

$$= \sqrt{143.60}$$

$$= 11.98$$

For HBL

$$\pm = \sqrt{\frac{\Sigma(18.57-26.58)^2+(28.69-26.58)^2+(31.56-26.58)^2+(28.43-26.58)^2+(25.66-26.58)^2}{5}}$$

$$= \sqrt{19.54}$$

$$= 4.42$$

For BOK

$$\pm = \sqrt{\frac{\Sigma(19.46-28.63)^2+(31.61-28.63)^2+(39.21-28.63)^2+(33.37-28.63)^2+(19.50-28.63)^2}{5}}$$

$$= \sqrt{62.15}$$

$$= 7.88$$

Now,

Coefficient of variation (C.V) of P/E ratio

For SCBL	**For HBL**	**For BOK**
$C.V = \frac{11.98}{41.07} \times 100$	$C.V = \frac{4.42}{26.58} \times 100$	$C.V = \frac{7.88}{28.63} \times 100$
29.17%	16.63%	27.52%

APPENDIX- I (F)

Standard Deviation $(\pm)$ of Dividend Yield

For SCBL

$$\pm = \sqrt{\frac{\Sigma(3.44-1.70)^2 + (1.36-1.70)^2 + (1.17-1.70)^2 + (0.83-1.70)^2 + (1.68-1.70)^2}{5}}$$

$= \sqrt{0.84}$

$= 0.91$

For HBL

$$\pm = \sqrt{\frac{\Sigma(2.73-1.40)^2 + (0.86-1.40)^2 + (1.26-1.40)^2 + (0.68-1.40)^2 + (1.45-1.40)^2}{5}}$$

$= \sqrt{0.52}$

$= 0.72$

For BOK

$$\pm = \sqrt{\frac{\Sigma(2.12-1.17)^2 + (1.45-1.17)^2 + (0.09-1.17)^2 + (0.4-1.17)^2 + (1.79-1.17)^2}{5}}$$

$= \sqrt{0.62}$

$= 0.79$

Now,

Coefficient of variation (C.V) of P/E ratio

For SCBL

$$C.V = \frac{0.91}{1.70} \times 100$$

$= 77.78\%$

For HBL

$$C.V = \frac{0.72}{1.40} \times 100$$

$= 51.43\%$

For BOK

$$C.V = \frac{0.79}{1.17} \times 100$$

$= 67.52\%$

APPENDIX –II (A)

Correlation between EPS and DPS

For SCBL

Year	EPS (X)	DPS (Y)	X^2	Y^2	XY	$(X-\overline{X})^2$
2005/06	175.84	130	30919.71	16900	22859.20	1873.16
2006/07	167.37	80	28012.72	6400	13389.60	1213.83
2007/08	131.92	80	17402.89	6400	10553.60	0.41
2008/09	109.99	50	12097.80	2500	5499.50	509.40
2009/10	77.65	55	6029.52	3025	4270.75	3015.01
Total	$\sum x =$ 662.80	$\sum y$ =395	$\sum x^2$= 94462.64	$\sum y^2$= 35255	$\sum xy$= 56572.65	$\sum (x-\bar{x})^2$= 6611.91

Sources: Annual Report of Sample Banks

$$\bar{x} = \frac{\sum x}{n} = \frac{662.80}{5} = 132.56$$

$$\bar{y} = \frac{\sum y}{n} = \frac{395}{5} = 79$$

Coefficient of Correlation (r) = $\dfrac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}}$

$$\frac{5*56572.65 - 662.8*395}{\sqrt{5*94462.64 - (662.80)^2}\sqrt{5*35225 - (365)^2}} = \frac{21057.25}{181.68*207.12} = 0.56$$

Coefficient of determination (r^2) = $(0.56)^2 = 0.31$

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

$= 0.6745*\dfrac{1-0.31}{\sqrt{5}} = 0.21$

And, $6*PE(r) = 6.021 = 1.26$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$Y = a + bx$

Where,

a= regression constant

b= regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - \left(\sum x\right)^2} = \frac{5*56572.65 - 662.8*395}{5*94462.64 - (662.8)^2} = \frac{21057.25}{33007.36} = 0.64$$

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

$= 79 - 0.64*132.56 = -5.84$

Hence, the required simple regression equation as follows

$Y = -5.84 + 0.64x$

Standard error of estimate (S.E.E) $= \sqrt{\frac{\sum y^2 - a\sum y - b\sum xy}{n-2}}$

$$\sqrt{\frac{35225 - (-5.84)x395 - 0.64x5657.65}{5-2}} = \sqrt{441.77} = 21.02$$

Standard error of beta coefficient $(S_b) = \frac{S.E.E.}{\sqrt{\sum (x - \bar{x})^2}} = \frac{21.02}{\sqrt{6611.91}} = 0.26$

T-value (t) $= \frac{b}{S_b} = \frac{0.64}{0.26} = 2.46$

For HBL

Year	EPS (X)	DPS (Y)	X^2	Y^2	XY	$(X - \overline{X})^2$
2005/06	59.24	30	3509.38	900	1777.20	15.76
2006/07	60.66	15	3679.64	225	909.90	29.05
2007/08	62.74	25	3936.31	625	1568.50	55.80
2008/09	61.90	12	3831.61	144	742.80	43.96
2009/10	31.80	11.84	1011.24	140.19	376.51	550.84
Total	$\sum x =$ 276.34	$\sum y =$ 93.84	$\sum x^2 =$ 15968.18	$\sum y^2 =$ 2034.19	$\sum xy =$ 5374.91	$\sum (x - \bar{x})^2 =$ 695.41

Sources: Annual Report of Sample Banks

$$\bar{x} = \frac{\sum x}{n} = \frac{276.34}{5} = 55.27$$

$$\bar{y} = \frac{\sum y}{n} = \frac{395}{5} = 79$$

Coefficient of Correlation (r) = $\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - \left(\sum x\right)^2}\sqrt{n\sum y^2 - \left(\sum y\right)^2}}$

$$\frac{5*5374.91 - 276.34*93.84}{\sqrt{5*15968.18 - (276.34)^2}\sqrt{5*2034.19 - (93.84)^2}} = \frac{942.80}{58.97*36.95} = 0.43$$

Coefficient of determination (r^2) = $(0.43)^2 = 0.18$

Probable error of correlation coefficient, $P.E.(\text{r}) = 0.6745*\frac{1-r^2}{\sqrt{n}} = 0.6745*\frac{1-0.18}{\sqrt{5}}$

= 0.25

And, $6*PE(\neg) = 6*0.25 = 1.50$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$\text{Y} = a + bx$

Where,

a= Regression constant

b= Regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - \left(\sum x\right)^2} = \frac{5*5374.91 - 276.34*93.84}{5*15968.18 - (276.34)^2} = \frac{942.80}{3477.10} = 0.27$$

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

$= 18.77 - 0.27*55.27 = 3.85$

Hence, the required simple regression equation as follows

$Y = 3.85 + 0.27x$

Standard error of estimate $(S.E.E) = \sqrt{\frac{\sum x^2 - a\sum y - b\sum xy}{n-2}}$

$\sqrt{\frac{2034.19 - 3.85*93.84 - 0.27*5374.91}{5-2}} = \sqrt{73.89} = 8.6$

Standard error of beta coefficient $(S_b) = \frac{S.E.E}{\sqrt{\sum (x-\bar{x})^2}} = \frac{8.6}{\sqrt{695.41}} = 0.33$

T- Value $(t) = \frac{b}{S_b} = \frac{0.27}{0.33} = 0.82$

For BOK

Year	EPS (X)	DPS (Y)	X^2	Y^2	XY	$(X-\overline{X})^2$
2005/06	43.67	18	1907.07	324	786.06	28.09
2006/07	43.50	20	1892.25	400	870	29.92
2007/08	59.94	2.11	3592.80	4.45	126.47	120.34
2008/09	54.68	7.37	2989.90	54.32	402.99	32.60
2009/10	43.08	15	1855.89	225	646.20	34.69
Total	$\sum x$= 244.87	$\sum y$ = 62.48	$\sum x^2$= 12237.91	$\sum y^2$= 1007.77	$\sum xy$= 2831.72	$\sum (x-\bar{x})^2$= 245.65

Sources: Annual Report of Sample Banks

$\bar{x} = \frac{\sum x}{n} = \frac{244.87}{5} = 48.97$

$\bar{y} = \frac{\sum y}{n} = \frac{62.48}{5} = 12.5$

Coefficient of Correlation (r) $= \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}}$

$\frac{5*2831.72 - 244.87*62.48}{\sqrt{5*12237.91 - (244.87)^2}\sqrt{5*1007.77 - (62.48)^2}} = \frac{-1140.88}{35.05*33.69} = -0.97$

Coefficient of determination (r^2) = $(-0.97)^2 = 0.94$

Probable error of correlation coefficient, $P.E.(\neg) = 0.6745*\frac{1-\neg^2}{\sqrt{n}} = 0.6745*\frac{1-0.94}{\sqrt{5}}$

$= 0.02$

And, $6*PE(\neg) = 6*0.02 = 0.12$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$Y = a + bx$

Where,

a= Regression constant

b= Regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - \left(\sum x\right)^2} = \frac{5*2831.72 - 244.87*62.48}{5*12237.91 - (244.87)^2} = \frac{-1140.88}{1228.23} = -0.93$$

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

$= 12.5 - (-0.93)*48.97 = 58.04$

Hence, the required simple regression equation as follows

$Y = 58.04 + (-0.93)x$

Standard error of estimate $(S.E.E) = \sqrt{\frac{\sum x^2 - a\sum y - b\sum xy}{n-2}}$

$$\sqrt{\frac{1007.77 - 58.04*62.48 + 0.93*2831.72}{5-2}} = \sqrt{4.98} = 2.23$$

Standard error of beta coefficient $(S_b) = \frac{S.E.E}{\sqrt{\sum (x - \bar{x})^2}} = \frac{2.23}{\sqrt{245.65}} = 0.14$

T- Value $(t) = \frac{b}{S_b} = \frac{-0.93}{0.14} = -6.64$

APPENDIX –II (B)
Correlation between EPS and MPS

For SCBL

Year	EPS (X)	MPS (Y)	X^2	Y^2	XY	$(X-\bar{X})^2$
2005/06	175.84	3775	30919.71	14250625	663796	1873.16
2006/07	167.37	5900	28012.72	34810000	987483	1213.83
2007/08	131.92	6830	17402.89	46648900	901013.60	0.41
2008/09	109.99	6010	12097.80	36120100	661039.90	509.40
2009/10	77.65	3279	6029.52	10751841	254614.35	3015.11
Total	$\sum x$= 662.80	$\sum y$ = 25794	$\sum x^2$= 94462.64	$\sum y^2$= 142581466	$\sum xy$= 346794.85	$\sum (x-\bar{x})^2$= 6611.91

Sources: Annual Report of Sample Banks

$$\bar{x} = \frac{\sum x}{n} = \frac{662.8}{5} = 132.56$$

$$\bar{y} = \frac{\sum y}{n} = \frac{25794}{5} = 5158.80$$

Coefficient of Correlation (r) = $\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}}$

$$\frac{5*3467946.85 - 662.80*25794}{\sqrt{5*94462.64 - (662.80)^2}\sqrt{5*142581466 - (25794)^2}} = \frac{243471.05}{81.68*6897.60} = 0.19$$

Coefficient of determination (r^2) = $(0.19)^2$ = 0.04

Probable error of correlation coefficient, $P.E.(\neg) = 0.6745*\frac{1-\neg^2}{\sqrt{n}} = 0.6745*\frac{1-0.04}{\sqrt{5}}$

$= 0.29$

And, $6*PE(\neg) = 6*0.29 = 1.74$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$Y = a + bx$

Where,

a= Regression constant

b= Regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - \left(\sum x\right)^2} = \frac{5*3467946.85 - 662.80*25794}{5*94462.64 - (662.80)^2} = \frac{243471.05}{33009.36} = 7.38$$

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

$= 5158.80 - 7.36*132.56 \quad = 4180.51$

Hence, the required simple regression equation as follows

$Y = 4180.51 + 7.38x$

Standard error of estimate $(S.E.E) = \sqrt{\frac{\sum x^2 - a\sum y - b\sum xy}{n-2}}$

$$\sqrt{\frac{142581466 - 4180.51*25794 - 7.38*346794.85}{5-2}} = \sqrt{3651981.10} = 1746.99$$

Standard error of beta coefficient $(S_b) = \frac{S.E.E}{\sqrt{\sum (x - \bar{x})^2}} = \frac{1746.99}{\sqrt{6611.91}} = 21.48$

T- Value $(t) = \frac{b}{S_b} = \frac{7.38}{21.48} = 0.34$

For HBL

Year	EPS (X)	MPS(Y)	X^2	Y^2	XY	$(X - \overline{X})^2$
2005/06	59.24	1100	3509.38	1210000	65164	15.76
2006/07	60.66	1740	3679.64	3027600	105548.40	29.05
2007/08	62.74	1980	3936.31	3920400	124225.20	55.80
2008/09	61.90	1760	3831.61	3097600	108944	43.96
2009/10	31.80	816	1011.24	665856	25948.80	550.84
Total	$\sum x$= 276.34	$\sum y$ = 7396	$\sum x^2$= 15968.18	$\sum y^2$= 11921456	$\sum xy$= 429830.40	$\sum (x - \bar{x})^2$ = 695.41

Sources: Annual Report of Sample Banks

$$\bar{x} = \frac{\sum x}{n} = \frac{276.34}{5} = 55.27$$

$$\bar{y} = \frac{\sum y}{n} = \frac{7396}{5} = 1479.20$$

Coefficient of Correlation $(\neg) = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - \left(\sum x\right)^2}\sqrt{n\sum y^2 - \left(\sum y\right)^2}}$

$$\frac{5*429830.40 - 276.34*7396}{\sqrt{5*15968.18 - (276.34)^2}\sqrt{5*11921456 - (7396)^2}} = \frac{105341.36}{58.97*2215.05} = 0.81$$

Coefficient of determination (r^2) = $(0.81)^2$ = 0.66

Probable error of correlation coefficient, $P.E.(\neg) = 0.6745*\frac{1-\neg^2}{\sqrt{n}} = 0.6745*\frac{1-0.66}{\sqrt{5}}$

$= 0.10$

And, $6*PE(\neg) = 6*0.1 = 0.60$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$Y = a + bx$

Where,

a= Regression constant

b= Regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - \left(\sum x\right)^2} = \frac{5*429830.40 - 276.34*7396}{5*15968.18 - (276.34)^2} = \frac{105341.36}{3477.10} = 30.30$$

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

$= 1479.20 - 30.30*55.27 = -195.48$

Hence, the required simple regression equation as follows

$Y = -195.48 + 30.30x$

Standard error of estimate $(S.E.E) = \sqrt{\frac{\sum x^2 - a\sum y - b\sum xy}{n-2}}$

$$\sqrt{\frac{11921456-(-195.48)*7369-30.30*429830.40}{5-2}} = \sqrt{114454.99} = 338.31$$

Standard error of beta coefficient $(S_b) = \frac{S.E.E}{\sqrt{\sum(x-\bar{x})^2}} = \frac{338.31}{\sqrt{695.41}} = 12.83$

T- Value $(t) = \frac{b}{S_b} = \frac{30.30}{12.83} = 2.36$

For BOK

Year	EPS (X)	MPS (Y)	X^2	Y^2	XY	$(X-\bar{X})^2$
2005/06	43.67	850	1907.07	722500	37119.50	28.09
2006/07	43.50	1375	1892.25	1890625	59812.50	29.92
2007/08	59.94	2350	3292.80	5522500	140859	120.34
2008/09	54.68	1825	2989.90	3330625	99791	32.60
2009/10	43.08	840	1855.89	705600	36187.20	34.69
Total	$\sum x$= 244.87	$\sum y$ = 7240	$\sum x^2$= 12237.91	$\sum y^2$= 12171850	$\sum xy$= 373769.20	$\sum(x-\bar{x})^2$= 245.64

Sources: Annual Report of Sample Banks

$\bar{x} = \frac{\sum x}{n} = \frac{244.87}{5} = 48.97$

$\bar{y} = \frac{\sum y}{n} = \frac{7240}{5} = 1448$

Coefficient of Correlation (r)= $\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}}$

$\frac{5*373769.20 - 244.87*7240}{\sqrt{5*12237.91-(244.87)^2}\sqrt{5*12171850-(7240)^2}} = \frac{95987.2}{35.05*2905.45} = 0.94$

Coefficient of determination (r^2) = $(0.94)^2$ = 0.88

Probable error of correlation coefficient, $P.E.(\neg) = 0.6745*\frac{1-\neg^2}{\sqrt{n}} = 0.6745*\frac{1-0.88}{\sqrt{5}}$

$= 0.04$

And, $6*PE(\neg) = 6*0.04 = 0.24$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$Y = a + bx$

Where,

a= Regression constant

b= Regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - \left(\sum x\right)^2} = \frac{5*373769.20 - 244.87*7240}{5*12237.91 - (244.87)^2} = \frac{95987.20}{1228.23} = 78.15$$

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

$= 1448 - 78.15*48.97 = -2379.01$

Hence, the required simple regression equation as follows

$Y = -2379.01 + 78.15x$

Standard error of estimate $(S.E.E) = \sqrt{\frac{\sum x^2 - a\sum y - b\sum xy}{n-2}}$

$$\sqrt{\frac{12171850 - (-2379.01)*7240 - 78.15*373769.20}{5-2}} = \sqrt{61939.81} = 248.88$$

Standard error of beta coefficient $(S_b) = \frac{S.E.E}{\sqrt{\sum (x - \bar{x})^2}} = \frac{248.88}{\sqrt{245.64}} = 15.88$

T- Value $(t) = \frac{b}{S_b} = \frac{78.15}{15.88} = 4.92$

APPENDIX –III(C)
Correlation between DPS and MPS

For SCBL

Year	DPS (X)	MPS (Y)	X^2	Y^2	XY	$(X-\overline{X})^2$
2005/06	130	3775	16900	14250625	490750	2601
2006/07	80	5900	6400	34810000	472000	1
2007/08	80	6830	6400	46648900	546400	1
2008/09	50	6010	2500	36120100	300500	841
2009/10	55	3279	3025	10751841	180345	576
Total	$\sum x$= 395	$\sum y$ = 25794	$\sum x^2$= 35225	$\sum y^2$= 142581466	$\sum xy$= 1989995	$\sum (x-\bar{x})^2$= 4220

Sources: Annual Report of Sample Banks

$$\bar{x} = \frac{\sum x}{n} = \frac{395}{5} = 79$$

$$\bar{y} = \frac{\sum y}{n} = \frac{25794}{5} = 5158.80$$

Coefficient of Correlation (r) = $\dfrac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - \left(\sum x\right)^2}\sqrt{n\sum y^2 - \left(\sum y\right)^2}}$

$$\frac{5*1989995 - 395*25794}{\sqrt{5*35225 - (395)^2}\sqrt{5*142581466 - (25794)^2}} = \frac{-238655}{141.77*6897.60} = -0.24$$

Coefficient of determination (r^2) = $(-0.24)^2 = 0.06$

Probable error of correlation coefficient, $P.E.(\neg) = 0.6745*\dfrac{1-\neg^2}{\sqrt{n}} = 0.6745*\dfrac{1-0.06}{\sqrt{5}}$

$= 0.28$

And, $6*PE(\neg) = 6*0.28 = 1.68$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$Y = a + bx$

Where,

a= Regression constant

b= Regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$$b=\frac{n\sum xy-\sum x\sum y}{n\sum x^2-\left(\sum x\right)^2} = \frac{5*1989995-395*25794}{5*35225-(395)^2} = \frac{-238655}{20100} = -11.87$$

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

$$= 5158.80-(-11.87)*79 \qquad = 6096.53$$

Hence, the required simple regression equation as follows

$$\mathrm{Y}=6096.53+(-11.87)x$$

Standard error of estimate $(S.E.E)=\sqrt{\frac{\sum x^2-a\sum y-b\sum xy}{n-2}}$

$$\sqrt{\frac{142581466-6096.53*25794-(-11.87)*1989995}{5-2}} \qquad =\sqrt{1789762.37} = 1337.82$$

Standard error of beta coefficient $(S_b)=\frac{S.E.E}{\sqrt{\sum(x-\bar{x})^2}} = \frac{1337.82}{\sqrt{4220}} = 20.59$

T- Value $(t)=\frac{b}{S_b}=\frac{-11.87}{2059}=-0.58$

For HBL

Year	DPS (X)	MPS (Y)	X^2	Y^2	XY	$(\mathrm{X}-\overline{\mathrm{X}})^2$
2005/06	30	1100	900	1210000	33000	126.11
2006/07	15	1740	225	3027600	26100	14.21
2007/08	25	1980	625	3920400	49500	38.81
2008/09	12	1760	144	3097600	21120	45.83
2009/10	11.84	816	140.14	665856	9661.44	48.02
Total	$\sum x=$ 93.84	$\sum y=$ 7396	$\sum x^2=$ 35225	$\sum y^2=$ 11921456	$\sum xy=$ 139381.44	$\sum(x-\bar{x})^2=$ 272.98

Sources: Annual Report of Sample Banks

$$\bar{x}=\frac{\sum x}{n}=\frac{93.84}{5}=18.77$$

$$\bar{y}=\frac{\sum y}{n}=\frac{7396}{5}=1479.20$$

Coefficient of Correlation (r) = $\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - \left(\sum x\right)^2}\sqrt{n\sum y^2 - \left(\sum y\right)^2}}$

$\frac{5*139381.44 - 93.84*7396}{\sqrt{5*2034.19 - (93.84)^2}\sqrt{5*11921456 - (7396)^2}} = \frac{2866.56}{36.95*2215.05} = 0.04$

Coefficient of determination (r^2) $= (0.04)^2 = 0.0016$

Probable error of correlation coefficient, $P.E.(\neg) = 0.6745*\frac{1-\neg^2}{\sqrt{n}} = 0.6745*\frac{1-0.0016}{\sqrt{5}}$

$= 0.30$

And, $6*PE(\neg) = 6*0.30 = 1.80$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$Y = a + bx$

Where,

a= Regression constant

b= Regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - \left(\sum x\right)^2} = \frac{5*139381.44 - 93.84*7396}{5*2034.19 - (93.84)^2} = \frac{2866.56}{1365} = 2.1$

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

$= 1479.20 - 2.1*18.77 = 1439.78$

Hence, the required simple regression equation as follows

$Y = 1439.78 + 2.1x$

Standard error of estimate $(S.E.E) = \sqrt{\frac{\sum x^2 - a\sum y - b\sum xy}{n-2}}$

$\sqrt{\frac{11921456 - 1439.78*7396 - 2.1*139381.44}{5-2}} = \sqrt{326714.03} = 571.59$

Standard error of beta coefficient $(S_b) = \frac{S.E.E}{\sqrt{\sum (x-\bar{x})^2}} = \frac{571.59}{\sqrt{272.98}} = 34.60$

T- Value $(t) = \frac{b}{S_b} = \frac{2.1}{34.60} = 0.06$

For BOK

Year	DPS (X)	MPS (Y)	X^2	Y^2	XY	$(X-\bar{X})^2$
2005/06	18	850	324	722500	15300	30.25
2006/07	20	1375	400	1890625	27500	56.25
2007/08	2.11	2350	4.45	5522500	4958.50	107.95
2008/09	7.37	1725	54.32	3330625	13450.25	26.32
2009/10	15	840	225	705600	12600	6.25
Total	$\sum x$= 62.48	$\sum y$ = 7240	$\sum x^2$= 1007.77	$\sum y^2$= 12171850	$\sum xy$= 73808.75	$\sum (x-\bar{x})^2$= 227.02

Sources: Annual Report of Sample Banks

$\bar{x} = \frac{\sum x}{n} = \frac{62.48}{5} = 12.5$

$\bar{y} = \frac{\sum y}{n} = \frac{7240}{5} = 1448$

Coefficient of Correlation (r) = $\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}}$

$\frac{5*73808.75 - 62.48*7240}{\sqrt{5*1007.77 - (62.48)^2}\sqrt{5*12171850 - (7240)^2}} = \frac{-83311.45}{33.69.*2905.45} = -0.85$

Coefficient of determination (r^2) $= (-0.85)^2 = 0.72$

Probable error of correlation coefficient, $P.E.(\neg) = 0.6745*\frac{1-\neg^2}{\sqrt{n}} = 0.6745*\frac{1-0.72}{\sqrt{5}}$

$= 0.08$

And, $6*PE(\neg) = 6*0.08 = 0.48$

Regression equation of Y on X

The regression equation of Y on X is expressed as,

$Y = a + bx$

Where,

a= Regression constant

b= Regression coefficient (Slope of the regression line)

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

$\sum y = na + b\sum x$ and $\sum xy = a\sum x + b\sum x^2$

Solving the normal equation, we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - \left(\sum x\right)^2} = \frac{5*73808.75 - 62.48*7240}{5*1007.77 - (62.48)^2} = \frac{-83311.45}{1135.10} = -73.40$$

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

$$= 1448 - 73.40*12.5 = 2365.50$$

Hence, the required simple regression equation as follows

$$Y = 2365.50 + (-73.40)x$$

Standard error of estimate $(S.E.E) = \sqrt{\frac{\sum x^2 - a\sum y - b\sum xy}{n-2}}$

$$\sqrt{\frac{12171850 - 2365.50*7240 - (-73.40)*73808.75}{5-2}} = \sqrt{154397.42} = 392.93$$

Standard error of beta coefficient $(S_b) = \frac{S.E.E}{\sqrt{\sum (x - \bar{x})^2}} = \frac{392.93}{\sqrt{227.02}} = 26.08$

T- Value $(t) = \frac{b}{S_b} = \frac{-73.40}{26.08} = -2.81$

APPENDIX –III
Test of Hypothesis

EPS of Sample Banks

Year	SCBL(X_1)	HBL(X_2)	BOK(X_3)	X_1^2	X_2^2	X_3^2
2005/06	175.84	59.24	43.67	30919.71	3509.38	1907.07
2006/07	167.37	60.66	43.50	28012.72	3679.64	1892.25
2007/08	131.92	62.74	59.94	17402.89	3936.31	3592.80
2008/09	109.99	61.90	54.68	12097.80	3831.61	2989.90
2009/10	77.65	31.80	43.08	6029.52	1011.24	1855.89
Total	$\sum x_1 =$ 662.7	$\sum x_2 =$ 276.34	$\sum x_3 =$ 244.87	$\sum X_1^2 =$ 94462.64	$\sum X_2^2 =$ 15968.18	$\sum x_3^2 =$ 12237.91

Source: Annual Report of Sample Banks

F- ratio = $\frac{mean\ sum\ of\ square\ between\ sample(MSC)}{mean\ sum\ of\ square\ within\ sample(MSE)}$

Grand total (T) = $\sum X_1 + \sum X_2 + \sum X_3 = 662.67 + 276.34 + 244.87 = 1183.98$

Correlation Factor (CF) $= \frac{T^2}{N} = \frac{(1183.98)^2}{15} = 93453.91$

Total sum of square (T.S.S) = $\sum X1^2 + \sum X2^2 + \sum X3^2 =$
$94462.64 + 15968.18 + 12237.91 = 122668.73$

Sum of square between sample (S.E.E) = $\frac{(\sum X1)^2}{n_1} + \frac{(\sum X2)^2}{n_2} + \frac{(\sum X3)^2}{n_3} - C.F$

$= \frac{(662.77)^2}{5} + \frac{(276.34)^2}{5} + \frac{(244.87)^2}{5} - 93453.91$

$= 87852.81 + 15272.76 + 11992.26 - 93453.91$

= 21663.92

Sum of square with in sample (S.E.E.) = TSS- SSC
$= 122668.73 - 21663.92$
$= 101004.81$

APPENDIX –IV
Test of Hypothesis

DPS of Sample Banks

Year	SCBL(X_1)	HBL(X_2)	BOK(X_3)	X_1^2	X^2	X_3^2
2005/06	130	30	18	16900	900	324
2006/07	80	15	20	6400	225	400
2007/08	80	25	2.11	6400	625	4.25
2008/09	50	12	7.37	2500	144	54.32
2009/10	55	11.84	15	3025	140.19	225
Total	$\sum x_1 = 395$	$\sum x_2 =$ 93.84	$\sum x_3 =$ 62.48	$\sum X_1^2 =$ 35225	$\sum X_2^2 =$ 2034.19	$\sum x_3^2 =$ 1007.77

Source: Annual Report of Sample Banks

F- Ratio = $\frac{mean\ sum\ of\ square\ between\ sample(MSC)}{mean\ sum\ of\ square\ within\ sample(MSE)}$

Grand total (T) = $\sum X_1 + \sum X_2 + \sum X_3 = 395 + 93.84 + 62.48 = 551.32$

Correlation Factor (CF) $= \frac{T^2}{N} = \frac{(551.32)^2}{15} = 20263.38$

Total sum of square (T.S.S) = $\sum X1^2 + \sum X2^2 + \sum X3^2 =$

$35225 + 2034.19 + 1007.77 = 38266.96$

Sum of square between sample (S.E.E) = $\frac{(\sum X1)^2}{n_1} + \frac{(\sum X2)^2}{n_2} + \frac{(\sum X3)^2}{n_3} - C.F$

$= \frac{(395)^2}{5} + \frac{(93.84)^2}{5} + \frac{(62.68)^2}{5} - 20263.58$

$= 31205 + 1761.19 + 780.75 - 20263.58$

= 13483.36

Sum of square with in sample (S.E.E.) = TSS- SSC

=38266.96-13483.36

=24783.60

APPENDIX –V
Test of Hypothesis

MPS of Sample Banks

Year	SCBL(X_1)	HBL(X_2)	BOK(X_3)	X_1^2	X_2^2	X_3^2
2005/06	3775	1100	850	14250625	1210000	722500
2006/07	5900	1740	1375	34810000	3027600	1890625
2007/08	6830	1980	2350	46648900	3920400	5522500
2008/09	6010	1760	1825	36120100	3097600	3330625
2009/10	3279	816	840	10751841	665856	705600
Total	$\sum x_1 =$ 25794	$\sum x_2 =$ 7396	$\sum x_3 =$ 7240	$\sum X_1^2 =$ 1425581466	$\sum X_2^2 =$ 11921456	$\sum x_3^2 =$ 12171850

Source: Annual Report of Sample Banks

F- Ratio = $\frac{mean\ sum\ of\ square\ between\ sample(MSC)}{mean\ sum\ of\ square\ within\ sample(MSE)}$

Grand total (T) = $\sum X_1 + \sum X_2 + \sum X_3$ = 25794+7369+7240 = 40430

Correlation Factor (CF) $= \frac{T^2}{N} = \frac{(40430)^2}{15} = 10897236.70$

Total sum of square (T.S.S) = $\sum X1^2 + \sum X2^2 + \sum X3^2 =$
$142581466 + 1921456 + 12171850 = 166674772$

Sum of square between sample (S.E.E) = $\frac{(\sum X1)^2}{n_1} + \frac{(\sum X2)^2}{n_2} + \frac{(\sum X3)^2}{n_3} - C.F$

$= \frac{(25794)^2}{5} + \frac{(7396)^2}{5} + \frac{(7240)^2}{5} - 108972326.72$

$= 13306608720 + 10940163.20 + 10483520 - 10897236.70$

= 45517443.70

Sum of square with in sample (S.E.E.) = TSS- SSC
=166674772-45517443.70
=121157328.30