CHAPTER-I

INTRODUCTION

1.1   Background of the Study

Nepal has a banking history of about seven decades. Nepal Bank Ltd is the first bank of the country, which was established in 1994 B.S. Nepal Rastra Bank was the second one to be established, which is the central bank of Nepal. It was established with objectives to promote, develop and facilitate the banking sector. Later due to the favorable & liberal economic policy by the formulated by the government, foreign investors were also attracted. As a result some Joint Venture banks were established among which Nepal Arab Bank is the first one. At present there are thirty commercial banks in Nepal. Most of the financial institutions are established with the motive of earning profit & thus providing the return to the investors & shareholders for the risk they have taken in the form of investment. These financial institutions may distribute whole profit they made in the form of dividend or might retain some part of it & distribute remaining. Thus, the entity might retain some part of the profit for the further investment or growth of the business & distribute remaining amongst shareholders, owners, partners etc. If the entity retains some part of net profit for the sake of business growth in future & further investment is called "retained earnings" & if it distributes rest portion of the net profit to its shareholders, partners or owners, it is called dividend. The entity may distribute the net profit in the form of cash or shares. If the entity distributes the dividend in the form of cash is called cash dividend & if it distributes the dividend in the form of shares unit is called bonus share.

The policy made by a company to distribute the profit to its shareholder and retention for its re-investment is known as dividend policy. Dividend policy is the main part of financing decision. Retained earning is the most significant internal sources of financing for the growth of the firm. Dividend policy is a major decision for the board of director as the board has to decide either paying out to the shareholder and keep them happy in the short term or

total money for investment which may be more beneficial to shareholder in the long term.

Dividend policy determines the allocation of the net profit between payments to the shareholder and re-investment in the firm. In other words, dividend can be defined as dividing the earning between dividend and retention. The sharing kept as resources by the company is known as retained earnings. Retained earning is one of the most significance sources of funds required for the company growth. At the end of the fiscal year management has to decide how much money should be kept as retention and how much should be kept as retention and how much should be kept as distributed to shareholders. This is the important aspect of the dividend policy.

In our country, there is no similar way on dividend distribution. Usually dividends are paid annually after the publication of financial report in Nepal. Some companies may pay whole earnings within the year as dividends, where as in some companies some part of earnings may be paid as dividend & rest part be retained. Actually the usual dividend payout ratio seems to be 40%. Thus, in short the decision to keep some portion to retention and some to dividends made regarding earnings is known to be "Dividend Policy."

Dividend patterns may be defined as the way of acting of corporation with regards to providing returns to investors in return to their investment in the shares. Corporate sector is small and it is in early stage of growth in Nepal. Now- a- days, investors in Nepal are gaining knowledge about the investment in the shares of various companies. They are involved in the trading of shares of various companies. The dividend policy of any company affects the trading of its shares. Investors are investing their funds in the share of public companies encouragingly. This trend plays a significance role for the development and expansion of the capital of the market and it will continue only when dividend pattern is directed to the interest of the shareholders.

This research work will study into all relevant factors of dividends policies of selected financial institution. Nepal has already adopted liberal

economic policies. Among the listed companies, financial institutions (especially A Class financial institutions) will be used as sample companies.

1.2   Emerging Concept and Expansion of bank in Nepal:

As in other countries goldsmith and money lender where the ancient bankers of Nepal which are also known as "Sahu mahajan", "Tejarath Adda" were established during tenure of the Prime minister Ranodip singh (B.S 1993) was the first steps towards the institutional development of banking in Nepal. Tejarath Adda did not collect deposit from the public but gave loans to government official and the public against the deposit of gold and silver.

Banking is true sense of term started with the inception of Nepal bank limited (NBL)on Kartik, 1994 B.S from its inception it carried out functions of a commercial banks, NBL paid more attention to profit generating activities. This is the first financial institution of the nation.

The economic and industrial development had stopped in Nepal on the Second World War. After 2007 B.S, banking activities of Nepal were not satisfactory due to the political instability. At first Nepal Rastra Bank was given the authority and established in Nepal. It issued Nepali notes on 7th Falgun 2016 B.S for the first time. This bank is the central bank of Nepal to look after the banking need of the country with the following objectives.

- ⎫ To secure country wide circulation of Nepalese currency.
- ⎫ To mobilize capital for economic development and stipulation it trade and industries.
- ⎫ To step dual monetary system.
- ⎫ To provide for issuance of notes.
- ⎫ To achieve stability in its exchange rate.
- ⎫ To apply monetarism in all part of the kingdom.
- ⎫ To develop banking system in Nepal.

The central bank plays a significant role in developing country to develop the banking system for the mobilization of resources and using them in the priority areas to match development plan. So, Nepal Rastra Bank has been authorized to play this role.

Rastriya Banijya Bank was another important bank to establish in Nepal in 2022 B.S. The purpose of this bank was also to provide the facilities for the economic welfare of the general public. After the establishment of this bank, most of the braches and exchange counter of NRB (Nepal Rastra Bank) were gradually handed over to this bank. Its main features were to contribute to the development of the banking system throughout the country. Particularly, the remote areas lying in the hilly regions were not served by commercial bank. To fulfill the growing credit requirement and also to collect more deposit for the development projects, NRB adopted liberal policy and provided many facilities to probable bankers of Nepal and abroad. After this many joint venture banks began to establish.

Nepal Arab Bank Limited was the first joint venture banks of Nepal. Nepal Arab Bank Limited was established in 2041 B.S. was the outcome of joint venture with Dubai Bank Limited of United Arab Emirates. Nepal Indosuez Bank (currently known as Nepal Investment Bank) was the second bank established under the joint venture in 2042 B.S. This bank is a joint venture between Nepal and French partners. Another bank with a joint venture between Nepal and United Kingdom, established in 1987 A.D. is Nepal Grind lays Bank (Currently known as Standard Chartered Bank).

After the restoration of democracy in 2046 B.S. NRB adopted more liberal attitude in opening of commercial banks. It also followed market oriented liberal economic policy for competitive banking system to attract private sector as well as foreign investor with their capital/skill and technology in banking business. The process of registration, while opening new commercial banks were simplified and commercial banks were given the facilities to maintain the interest rate based on competition according to open market policy.

Due to the liberal policy in establishing the commercial banks, other commercial banks come into existence during the 1990's under the foreign collaboration. At present there are altogether 30 commercial banks in operation in Nepal which are as listed below:

1. Nepal Bank Limited
2. Rastriya Banijya Bank
3. Agriculture Development Bank Limited
4. Nabil Bank Limited
5. Nepal Investment Bank Limited
6. Standard Chartered Bank Nepal Limited
7. Himalayan Bank Limited
8. Nepal SBI Bank Limited
9. Nepal Bangladesh Bank Limited
10. Everest Bank
11. Bank of Kathmandu Limited
12. Nepal Credit and Commerce Bank Limited
13. Lumbini Bank Limited
14. NIC Asia Bank Limited
15. Machhapuchchhre Bank
16. Kumari Bank
17. Laxmi Bank
18. Siddhartha Bank Limited
19. Global IME Bank Limited
20. Citizens Bank International Limited
21. Prime Commercial Bank
22. Sunrise Bank
23. Grand Bank Nepal Limited
24. NMB Bank Limited
25. Prabhu Bank Limited
26. Janata Bank Nepal Limited
27. Mega Bank Nepal Limited
28. Civil Bank Limited
29. Century Bank Limited
30. Sanima Bank Limited

a. Nabil Bank Limited (NABIL)

Nabil Bank commenced operations 30 years ago, on the 12th of July 1984 through a Joint-venture with Dubai Bank Ltd marking a turning point in the banking history of Nepal. Nabil bank is the first foreign joint venture bank of Nepal. It was established with the technical collaboration of the then Dubai Bank Ltd along with institutions like Nepal Industrial Development Bank, Rastriya Beema Sanstha & Nepal Stock Exchange. The bank has the share capital of NPR.3,046,051 K on Mid July 2013 A.D.(As per the financial report of fiscal year 2070/71).Nabil is moving forward with a Mission to be "**1st Choice Provider of Complete Financial Solutions**" for all its stakeholders; Customers, Shareholders, Regulators, Communities and Staff. Nabil is determined in delivering excellence to its stakeholders in an array of avenues, not just one parameter like profitability or market share. It is reflected in its Brand Promise "**Your Bank at your service**". The entire Nabil Team embraces a set of Values "C.R.I.S.P", representing the fact that Nabil consistently strives to be Customer Focused, Result Oriented, Innovative, Synergistic and Professional. Currently, NABIL is one of the leading commercial bank of the country.

(Source: Annual Report of NABIL Bank Limited)

b. Nepal Investment Bank Limited

Nepal Investment Bank Limited was established on 21st January 1986 as the third joint venture bank under company Act 1964. Ownership partner of the bank was 50% equity owned by Banque Agricole Indosuez Paris, 15% equity owned by National Insurance Corporation, 15% equity owned by Rastriya Banijya Bank (RBB) and 20% equity share was issued to general public. Later on, Banque Agricole Indosuez Paris handles the management and ownership of the bank to Nepalese Private Sector. Currently, the bank is 100% under Nepalese ownership. The bank has authorized capital Rs.5 billion, issued & paid up capital Rs. 4.14 billion. After, Banque Agrikol Indosuez Paris handle management to Nepalese private sector the name of the bank is changed Nepal Investment Bank Limited.

c.   Himalayan Bank Limited

Himalayan Bank Limited was established on 18th January 1993 under Company Act, 1964. This bank was established by distinguished business personalities of Nepal. HBL has partnership with Employee's Provident Fund and Habib Bank Limited. HBL is one of the best largest and leading commercial bank of Nepal with maximum shareholding by the Nepalese sector and commanded by Nepalese Chief Executives. This is only bank with minority foreign joint venture. Shareholding partner of the bank 155 share owned by Nepalese Private Sector promoters, 20% share owned by Habib Bank Limited, 14% share owned by Employee's provident fund and 15% share issued to general public. The bank has authorized capital Rs.4 billion, issued and paid up capital Rs.2.76 billion. All the commercial banks selected for study is the leading banks of the country. Under Study, individual analysis of the bank is conducted and on the basis of these sample banks inference is draw inference is drawn for banking sector as whole.

d.   Bank of Kathmandu Limited (BOKL)

Bank of Kathmandu Limited is one of the latest joint venture bank listed in the BWPSE. It was established in 28th Falgun 2051 B.S. (1993 A.D.) collaboration with the SIAM Commercial Bank, Thailand under the Company Act. The major objective of the bank was to operate commercial banking activities through out the country with the approval of NRB. The SIAM commercial bank directed holding to the Nepalese Citizen in 1998. Hence, Nepalese public hold 97.72 % of the equity share of BOKL and remaining share are hold by financial institution (0.9%) and organized institution (1.38%). The bank has authorized capital Rs.2 billion, issued and paid up capital Rs.1.68 billion.

1.3 Focus of the Study

Dividend refers to the portion of income of the firm that is distributed to the shareholders in the return to their investment in the share "By a dividend policy we mean some kinds of constituent approach to the distribution various retention decision rather than making the decision on the purely adhoc basic from period to period."

So what and how much it is desirable to pay dividend always a controversial topic because shareholders always expect higher dividend but the firms tries to issue side funds for maximizing the shareholders wealth.

Investor's intention is to get more and more return but most of the corporation of banking institution is not in good condition. Hence, institution can not pay more return. But, now-a-days investors are attracted towards financial institution due to the growth of saving. If funds can be raised by collecting in different ways and mobilizing it properly then profit can be made.

In Nepal, there is no pattern of distribution the history shows that the government was unable to receive dividends from different public enterprise in the past. Now a days different Joint venture banks have shown new trend of paying dividends to their shareholder. In some banks we can see the trend of paying a small number of corporation are paying regular dividends and the other corporation are paying regular dividends and other are not paying consistent in the payment of dividends and there are still some companies not having the practice of paying dividends in their history.

1.4 Statement of Problems

Dividend, the most inspiring factor for the investment on shares of the corporation, is an important aspect of financial management; because the dividend policy determines the division of earning between payment to stockholders and reinvestment in the firm to exploit growth opportunities. It affects the value of the firm as well as overall financing decision such as financial structure, the flow of funds, corporate liquidity and investor's satisfaction.

In the context of Nepalese Commercial Banks and public enterprises listed in Nepal Stock Exchange are not seen so serious regarding dividend decision since the most of them don not have consisted and clear but policy on dividend distribution. There is no limited to the identification of the problem about dividend policy that is visible in Nepalese Commercial Bank. Even if there is policy that dividend policy of commercial bank is not matching with the earnings. Retained earning of a firm is taken as financing sources. If the firm retains it earnings, it will result in decreasing leverage ratio, expanding activities and increase profit in succeeding years. If the firms pay dividend it may need to raise capital through capital market, which reduce ownership control of existing shareholders. Another way of the raising capital is debenture, which ultimately affect on the risk of the firm. However, dividend is most important factor for the attraction and motivation of investor and it also reflects firms' healthy position in the market. There is no limit to the identification of the problem about dividend policies and practices that are occurring in the different public companies.

In the context of Nepalese capital market, the commercial banks low rate of interest on deposits. So the people are attracted to invest money in share for greater benefits. In Nepalese context only a few companies have adopted dividend policies. There are different from of dividend payment such as cash dividend, stock dividend and bonus shares etc among different form of dividend policy stock dividend is the most popular one. But also dividend policy is not clearly understood by a large segment of financial community. Different research has been made in this area seeking to establish the irrelevance of dividend on shareholder's miller and Modiglianin's work the following question: how can investor get benefit from a dividend when it is not in effect, paid rupee for rupee out the value of share?

Besides, the number of research study has been made to lead the development of the behavior models associated with the name Linten (1956), Darling (1957) and Britain (1996) and other attempting to categories, explain and measure the different types of observed different practice. The study

seems to provide useful guidance in handling the complicated decision problem.

Every firm follows different forms of dividend policy based on their strategy for the company. It is assumed that there is direct relationship between the dividend and stock price. But whole considering the firms of underdeveloped country like Nepal, it is very difficult to match the relationship between dividend and stock price. There is no uniformity in the distribution of dividend of commercial banks. Similarly there is no any relationship between dividend distributed and share price. Due to political instability and meant other factors almost of the firms are not able to pay the dividend to their shareholders. The commercial banks especially joint venture banks pay low dividend while earning is high and sometime they pay high when earning is low. It has been known that all banks have sufficient earning but they are not distributing the dividend in equal proportion. They have not followed the consistency in dividend policy and dividend policy has not been found to be uniformity of dividend payout ratio in these sample banks.

a. To identify the dividend policies of different banks and find out whether the followed policy is appropriate or not and which policy is better.

b. To identify the regularity between dividend policy and other financial indicators.

c. To identify the relationship between dividend policy and other financial institutions.

d. To find out whether dividend policy influences the value of the firm or not.

e. To find out the relationship between dividends per share (DPS) and market price per share (MPS).

f. To find out the relationship between dividend per share and earning per share (EPS).

1.5   Objectives of the Study

This study is primarily undertaken to focus on the prevalent policies and practices of commercial banks with a view to suggest some appropriate dividend strategy and direction of future endeavors for the share of market and

also the possible impact of such endeavors in share market in Nepal. In this regard, the specific objectives of the study are:

a. To identify the dividend policies of different companies and to find out whether the followed polices is appropriate.

b. To highlight dividend practices of the bank.

c. To study whether the dividend per share affected by the earnings per share, market per share and retained earnings.

d. To identify the relationship between dividend policy and other financial indicators.

e. To find out problems and suggestions for further improvements in future.

f. To study the impact of dividends on its investment and shareholders.

1.6   Significance of the Study

In the present situation people are investing to invest their money in share to get more return. So, most of the commercial banks provide dividend to attract the fund to their non-institution. Due to sound dividends investor invest their money in different sectors. If investor is sure to get return from any sector, they prefer to invest. So, now-a- days commercial banks are getting more opportunity to collect more investment due to their policy.

The significant of the study is as follows:

a. This study will be useful for government to reformulate different policies like planning, controlling, monitoring and other purposes too.

b. This study provides important guidelines in setting suitable dividends policy in commercial banks.

c. This study will be helpful to find out the commercial banks.

d. It will be counseling to investor its stocks and to teach making decision rationally.

e. This study will be useful for shareholders, banks, finance companies, researcher, students and teachers.

1.7   Limitation of the Study

Each and every research has its own limitations likewise this has also some limitations. No one can be free from constraints. This research will be

done for the partial fulfillment of the requirement of Master of Business Studies Degree. The time is not sufficient and this study might not fulfillment of the lack of researcher experience. In addition, there are so many limitations, which whether the generalization, e.g. time taking, unreliability of statistical tools. Besides these, the following are the main limitations of the study.

a. There are 30 commercial banks in Nepal. Because of time and resource factors the study will be confined to four commercial banks.

b. There are so many factors those affect the decision and valuation of the firm. However, the only those factors related to dividend have been considered in this study.

c. The study considers the cash dividend policy only and excludes the stock dividend.

d. Only five years period are taken for the study.

e. Only secondary data are analyzed to interpret the result emerging from decision, so the result depends on the reliability and accuracy of secondary data.

f. The study is for the partial fulfillment of the M.B.S program.

g. The research has been done according to the Tribhuvan University format.

h. This study has been done using simple techniques and limited variable.

1.8   Organization of the Study

This study has been organized into five chapters. They are:

Chapter 1: Introduction of Study

This chapter consists of general background of the study with the references to the existing economic and political scenario, this chapter comprised of focus of the study, significance and objectives of the study, statement of the problem, research hypothesis, a brief introduction to the sample listed companies and the limitations of the study.

Chapter 2: Review of Literature

This chapter reviews the relevant previous studies made on the dividend policy. It includes the conceptual framework on dividend. The second part of

the chapter consists of review of books, journals. Previous study, research paper and review of unpublished various research studies.

Chapter 3: Research Methodology

The third chapter deals with the research methodology used in the study under this heading research design, population and sample, sampling methods, sources of data, methods of data, tools for analysis are used.

Chapter 4: Presentation and Analysis of Data

This chapter is considered with the presentation and analysis of data. This chapter consists of analysis, interpretation and major findings of the study. This is most important part of the study.

Chapter 5: Summary, Conclusion and Recommendations

This chapter involves the summary, conclusions and recommendation of the study and concludes the reports with the major recommendations and suggestion to the investor listed commercial banks and government about the dividend policy.

CHAPTER –II

REVIEW OF LITERATURE

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

Research is a continuous process. The procedure of findings may change but it never ends. In literature review researcher reviews the books. Journal , magazines or any other types of studies, which are related to his of her fields in order to analyze the data and to find something new. Review of literature further helps us to identify the problems, to avoid the unintentional replication of previous studies and also helps us to interpret the significance of research results in precise manner.

This research aims to analyze the dividends policy and practices of commercial banks viz. Nabil Bank limited. (NABIL), Himalayan Bank Limited (HBL), Nepal Investment Bank Limited (NIBL) and Bank Of Kathmandu Limited (BOKL). For this purpose it is helpful to review related literature in this concerned area, which will also help to get clear ideas, opinion and other concepts. 'What other has said? What others have done? And what others have written? All these and other related question are reviewed, which has provided useful inputs in this research work. This chapter emphasizes on the literatures, which are concerned with this connection. Some of the master degree thesis has also been reviewed.

2.1   Conceptual Framework

Dividends policy is one of the most important decisions on financial management. It affects the financial structure, the flood of funds, corporate liquidity and investor attitude for an existing company. There are two sources of financing one is internal sources (i.e. Retained earning) and the other is external sources (i.e. Issuing share & debenture). But the retained of profit is always widely affected by dividend policy. If the firm adopts sound dividend

policy, then less money will be available. In the same way if the firm adopts tight dividend policy, the excess money will be available for financing. "A dividend payment is distributed to the shareholder of the something belonging to the corporation and specifically to the stock holders themselves as owned by the corporation".

Dividend refers to that portion of firms net earning which is paid out the share holders. The policy of company on the decision of its profit between distribute to share holders as a dividend and retention for its opportunity investment is known as the dividend policy distribution of dividend to the share holder and plugging back the remaining of earning for opportunity investment is not the aim of the financial management, what and how much is desirable to pay dividends is always a controversial topic. Shareholder always expect higher dividend from corporation but corporation ensures towards setting a side funds for maximizing wealth. "Financial management is therefore concerned with the activities of corporation that affects the well being of shareholders. The well being can be partially measured by the dividends received, but a more accurate measure is the market value of stock."

So, dividend policy is wise policy to maintain a balance between shareholders' interest with that the corporation growth from internally generated funds.

Major Forms of Dividend

The firm can give various types of dividends to the stockholders in the view of the objectives and policies, which they implements. Before adopting any dividends the firms must ensure the smooth growing of the firm as well satisfy the exception of the shareholders, some of the major forms of dividends the firm can pay are discussed below:

a Cash Dividend

Most firms pay the dividend in form of cash. The portion of earning paid in the form of cash to investor in proportion to their shareholder 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 dividends paid. For the payment of cash dividends firm should have adequate balances of cash. In Nepal cash dividend is the mostly adopted by many firms.

b. Stock Dividend

If additional share are issued to existing shareholders intended of cash dividend is known as stock dividend. "A stock dividend represent a distribution of share in lieu of or in additional to the cash dividend to the existing shareholder." When stock holder receives stock dividend the number of share holders increases but as it is paid to existing shareholders on their proportion of their shareholding, it doesn't affect the ownership of the company. Stock dividend increases number of shares as a result EPS, DPS and MPS of the company decreases.

c. Bond Dividend

Bond Dividend is a dividend that is distributed to the shareholder in form of bond. When the company generates more profit for a long time it is better to issue bonds. These are given when the company firms unable to take the burden of interest of loan. In other words, corporation declares dividends in form of its own bonds with a view to avoid cash outflows. It is issued for existing shareholders.

d. Stock-split Dividend

Stock-split is also nothing more than increasing the number of outstanding shares and reducing proportionately in per value of stock. After the splitting of shares, share holders will have larger number of shares than they have before. Stock-slit has following effects on different factors.

➢ Increase in number of outstanding shares.
➢ Return in per value and price of stock.
➢ Constant in net worth and capital account.
➢ No change in proportion ownership of shareholders.

e. Property Dividend

It is also known by the name of liquidity dividends. It involves a payment of assets/property in any form other than cash. Such forms of

dividends may be followed whenever they 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 examples that have been paid as property dividends.

f. Scrip Dividend

If the company have not sufficient amount of cash for dividend payment, company may issue scrip or notes promising to pay dividend within the maturity period. So, scrip dividend is those paid in the company promised to pay instead of cash. These dividend may be interest bearing or non- interest bearing. When the company has sufficient cash then it is distributed to stock holders.

g. Interim Dividend

Generally, dividend is declared in the last of financial year. This is called regular dividend. But sometimes directors can declare the dividend before the end of the financial year. This is called interim dividend.

h. Share Re-Purchase

It is a method in which a firm buys back its own stock in case of some surplus cash. Share re-purchase is often viewed as an alternative to paying dividends. A company can reduce the number of share by re-purchasing the shares. The stock price must rise after the stock re-purchase if the price Earnings ratio remains unchanged. When there is excess cash in the firm and insufficient investment opportunities to justify the use of those funds, then it is wise to distribute the funds either by stock re-purchase or increasing the dividend. Share price for the re-purchase or the equilibrium price is calculated from the following equation.

Re-Purchase Price υ^{*} $= \dfrac{S\,B\upsilon_{c}}{S - 4}$

<u>Where,</u>

S = Total no of shares outstanding.

υ_{c} = Current Market price per share.

= Number of shares to be represented.

Dividend payout scheme

1) Stability of dividend

Dividend stability refers to the consistency or lack of dividend in steam of dividend. In other words, stability of share means regularity, I am paying dividend even though the amount of dividends may fluctuate from year to year. Stability or regularity of dividends is considered as a desirable policy by management in most of the firms. It refers to the amount of dividends paid out regularly, all other things remaining the same. Stable dividends may have a positive effect on the stock price. The major types of dividend policies established under dividends stability are:-

a. Constant Dividend Per Share

According to this form of dividend policy, the fixed amount is paid per share as dividend. The fixed dividend amount would be paid year after year, irrespective of the fluctuation in the earnings. When a company follows such dividend policy it will pay dividends to the stock holders even when it suffers losses. But, the amount of dividend is increased when the firms maintained higher levels of earning and expects to maintain it.

b. Constant Payout Ratio

This is nothing more than the payment of the certain percentage of earnings over the life of firm. This policy is favorable for that company that has uncertain income; management may recommend this policy considering the ability of company to pay dividend.

c. Stable Rupee Dividend Plus Extra Dividend (or Low Regular Dividend Plus Extras)

The policy of paying a low regular dividend plus extra is a compromise between a stable dividend and a constant payout ratio. Under this policy, a sum of amount is paid regularly as dividend to the stock holders and in the prospective period, extra dividend is paid over and above the regular dividend. As soon as normal conditions return, the firm cuts the extra dividend and pays the normal dividend per share.

d. Residual Theory of dividend

Residual theory of dividends suggest that only residual earnings should be distributed as dividend, which is left after accepting all the profitability investment opportunities which depends upon the investment policy of the firm. According to this theory, the dividends are distributed if there exists a balance of earning after paying fixed obligation and investment opportunities. If the firms have investment opportunities with higher return than required, then firm will invest the earnings to that project, and if there is only earnings left after accepting all the investment opportunities than it will be distributed to stock holders as cash dividend.

When the firm has opportunity of investment in profitability sectors at first, they prefer the internally generated fund (Retained earnings) rather than the externally generated funds which is comparatively expensive due to the flotation cost and others. So, the amount of dividends fluctuates time to time in keeping with availability of acceptable investment opportunity of the firm "Although, the residual theory of dividend appears to make further analysis of dividend policy unnecessary. It is not clear that dividends are solely a means of disbursing excess funds.

Thus, we can conclude that the company investment opportunity as well as the availability of internally generated funds determines the dividend amount of a firm.

Factors Influencing Dividend Policy

Dividends decision cannot be taken in vacant as well as in inflation rather various factors which affect the dividends policy, either directly or indirectly, must be taken into consideration which taking dividends decision. There are some factors, mentioned below to which financial manager must focus while taking dividend decision.

➤ Legal Restrictions

All the companies are bounded by certain legal restriction for dividend payments. These constraints are:

-) Company can pay dividends from the earning of current year or past year.
-) Company cannot pay dividend if the liabilities of the company exceeds assets.
-) Dividends cannot be paid if the amount of dividend to be distributed exceeds net profit.
-) Dividends cannot be paid from the capital invested in the firm.

➢ **Availability of cash or Liquidity**

The liquidity position of the company influences ability to pay dividend to pay dividend payments of dividend is possible only if the firm has sufficient earnings. But, it the firm invests in fixed assets from its sufficient recent earnings, cash amount is available to make dividend payments. "Indeed, a growing firm, even a very profitable are typically has pressing need for the funds." So, the company must have to manage adequate liquidity position as well as retained earnings.

➢ **Past Dividend**

A firm with record of past dividend payments strive to maintain the same and the future. Dividends are habit forming. If the market does not receive its expected dosage, the stock price will suffer.

➢ **Inflation**

In an indirect way, inflation also plays decisive role in dividend decision. Our system is based on historical cost. Depreciation is charged on the basis of original cost at which assets were acquired. As a result, when a price rises, funds shared an account of depreciation would not be adequate to replace assets or the maintain capital intact. Consequently, the company may have to retain high percentage of earning to maintain the capital intact or replace equipment.

➢ **Control**

If the company pays access cash dividend, there will be the shortage of funds to finance investment opportunities, which must be fulfilled by issuing new securities. This affects the control position of existing stock holders. So,

they are not desirable to distribute to earnings as dividends which prevents them to loose the control position to the company.

➢ **Legal Rules**

The legal rules constrain dividend payments on certain condition as follows:

i. Capital impairment rules states that dividend should not be paid out of paid-up capital, which causes adverse effect on security of creditors and preference stockholders.

ii. The new profit rules states that divided must be paid from present profit and or profit- retained earnings.

iii. The insolvency rules states that when liabilities exceed assets, no dividend can be paid.

➢ **Stability of Earning**

A firm that has a stable earnings trend will generally pay a larger portion of its earnings in dividends. If earnings fluctuate significantly, a larger amount of the profits may be retained to ensure that enough money in available for investment projects when needed. Therefore a firm, which has a earning or likely to payout a higher percentage of its earning than a firm with fluctuating earnings.

➢ **Tax Position of Stock holders**

Paying dividend is not only action of company but it also should consider the preferential need of the stock holders. The share holders with high income tax brackets prefer to receive low dividend and high rate o retention whereas company owned by small investors trend towards high dividend payout.

➢ **Investment opportunities in the company**

If the firm has future profitability investment opportunities, the firm is likely to reinvest the earnings rather than paying dividends. "The more repaid the rate at the need for financing assets expansion, the greater the future need for funds, the more likely the firm is to retain earnings rather than pay them ours."

➢ **Others**

Absence or lack of other sources of financing also makes the firm serious to retain the earning for opportunity investment and out the dividend to the share holders. An adequate cash flow should be maintained and the payment of cash dividend should not endanger the cash flow of the corporation. A high rate of assets expansion creates a need to retain funds rather than to pay dividends. Paying back the debts to the creditors also influences the availability of the cash flow to pay the dividends.

Payments Procedure of Dividend

Firms usually pay dividends on a quarterly basis in accordance with the following payments procedures.

➢ **Declaration date**

This is the day on which the board of directors declares the dividend. At this time they set the amount of the dividend to be paid, the holder of record data, and the payment date.

➢ **Holders- of- record date**

This is the date the company opens the ownership books to determine who will receive the dividends; the stock holders of record on this date receive the dividend.

➢ **Ex- Dividend date**

This date is four days prior to the record date. Shares purchased after the ex-divided date are not entitled to the dividends. Only investors who hold the share prior to the ex-dividend date receive the dividends.

➢ **Payments**

This is the day when dividend checks are actually mailed to the holders of records.

4 days

| 1/15 declaration | 1/26 ex-dividend | 1/30 record | 2/15 payment |
| date | date | date | date |
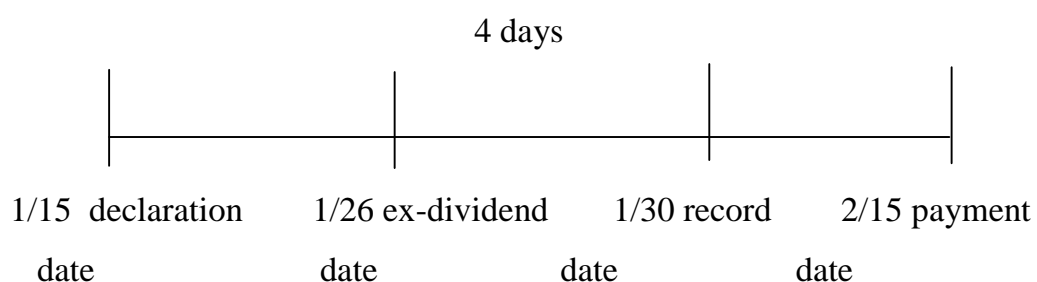
Rules Regarding Dividend Practices In Nepal

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

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

Likewise, Commercial Bank Act 2031 has also made same provisions for distributing dividend. Section is of this act states about the restriction of dividends distribution. According to this section, before providing the whole expenses by bank for preliminary expenses, loss incurred in last year, capital reserve, risk beard funds reserve fund, the bank shall not declare and distribute the dividend to the shareholders. Similarly, Company Act 1997 makes some legal provisions regarding dividends distributions, which are discussed below:

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

i. Section (2) (m) states that bonus shares means share issued in the form of additional shares to shareholders be capitalization the surplus from the profits on the reserve funds of a company. The form also denotes an increase in the paid up values of the shares after capitalizing surplus or reserve funds.

ii. Section (47) has prohibited company from purchasing its own shares. This section states that no company shall purchase its own shares supply loans against the security of its own shares.

iii. Section (137) bonus shares and sub-section (1) states that he company must inform the office before issuing bonus shares under sub-section(1);this may be done only according to a special resolution passed by the general meeting.

iv. Section (140) dividends and sub-section of this section are as follows.

v. Expect in the following circumstances, dividend shall be distributed among the shareholders with in 45 days from the date of decision to distribute them.

vi. In case of any low forbids the distribution of dividends.

vii. In case the right to dividends is disputed.

viii. In case dividends can't be distributed within the time limit mentioned above owing to circumstances beyond anyone's control without any fault on the part of the company.

ix. In case, dividends are not distributed with in the time limit, mentioned in subsection (1), this shall be done by adding interest at the prescribed rate.

x. Only the persons whose name stands registered in the register of existing share holders at the time of declining the dividend shall be entitled to it.

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

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

1 Dividend should be paid in profitability years, Even though there are cumulative losses, dividend is to be paid if cash flow is sufficient to distribute dividend.

2 In case of un- audited accounts, interim dividend should be paid on the basis of provisional financial statements.

3   Dividend rate will not be less than the interest rate on fixed deposit of commercial bank of government owned. In case of insufficiency of profit amount to distribute dividend in above mentioned rate, concerned corporation should send proposal of new distribution rate to the finance ministry through liaison ministry and should do what so ever decision is given thereof.

4   Those Corporations operating in monopoly situation should repay all amounts of profits to the government excepts the amount of bonus, tax and the amount needed to expand and develop the business. The amount separated for the expansion and development of business will not be more than 20 percent of profit of the year and this amount will not be more than total paid up capital. The amount so separated should all be paid as dividend if it is not used within 3 years.

5   Decision regarding distribution of annual net profit shall not be made without prior acceptance of Finance Ministry. All incentives, except those to be paid by low, shall not be distributed unless the amount of dividend is not paid to government.

6. Concerned BOD and top management will be held responsible for implementation of these dividend policies.

7   Ministry of Finance will make necessary arrangement regarding fixation of dividend percentage coordinating and concerned and ministries.

2.2   Review of Major Studies

Modigliani and Miller Study (Modigliani and Miller, 1961)

In their 1961 article Modigliani and Miller, for the first time in the history of finance, advocated that dividend policy does not affect the value of the firm, i.e., dividend policy has no effect on the share prices of the firm. They argued that the value of the firm depends on the firm's earnings which depend on its investment policy. Therefore, as per MM theory, a firm's value is independent of dividend policy.

Their study of irrelevancy of dividend was based on the following critical assumptions:

1. The firm operates in perfect capital market.

2. There are no taxes.

3. The firm has a fixed investment policy which is not subjected to change.

4. Risk of uncertainty does not exist.

Modigliani and Miller provided the proof in support o their arguments in the following manner.

Step-1

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

$$P_o = \frac{D_1 + P_1}{1 + \xi_e}$$

Where,

P_o = Market price at the beginning or at the zero periods.

ξ_e = Cost of equity capital (assume constant)

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

P_1 = Market price of the shares at the end of the period.

Step-2

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

$$np_o = \frac{n(D1 \Gamma P1)}{1 \Gamma Ke}$$

Where,

n = No. of shares outstanding

Step- 3

If the firms internal sources of the financing its investment opportunities fall short of the funds required, and ζn is the number of new shares issued at the end of years at price P_1 then,

$$n\upsilon_o = \frac{n D_1 + P_1 + \hbar n + C_\zeta \, \zeta \, n \, A \, \zeta n\upsilon_1}{1 + Ke}$$

Where,

n = No of shares at the beginning

ζn = No of equity shares issued at the end of the period.

Step-4

If the firms were to finance all investment proposals, then total amount of new shares issued would be given by the following equation.

Where,

$\zeta n \upsilon_1$ = The amount obtained from the sale of new shares to finance capital Budget.

λ = Total amount requirement of capital budget.

η = Earning of the firm during the period.

$\eta - nD_1$ = Retailed Earnings.

Steps-5:

By Substituting the value of ζnP_1 from equation of the step 4 to equation of step-3 the finding is:

$$nP_o = \frac{nD_1 + P_1 fn \Gamma \zeta n \text{ \AZ} \zeta nP_1}{1+\xi e}$$

Or,

$$nP_o = \frac{\upsilon_1 fn \Gamma \zeta n \text{ \AZ} \lambda \Gamma \eta}{1+\xi e}$$

Step 6:

Conclusion: There is no role of dividend in above equation. So Modigliani and Miller concluded that dividend policy had no effect on the share price.

In this way, according to Modigliani and Miller study, it seems that under conditions of perfect capital markets, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend is irrelevant is not Justified, once the assumptions is modified to consider the realities of the world . In practice,

every firm follows are kind of dividend policy depends on the age and nature of the firm. (Modigliani and Miller, 1961)

Linter's Study

In 1996, J. Linter made an important study on corporation dividends policy in the American context. He made fifteen readily observation factors and characteristics that appeared to reflect or might be accepted to have an important bearing and dividend payment and policy. Then he reviewed the available information an over 600 listed well – established companies and selected 28 for dividend investigation. The objectives of the study were:

1. To identify occasions when a change in dividends might have been under active consideration even though no change was made.

2. To determine the factors which existed most actively into dividend decision?

3. Different views were collected with regard to occasion's companies' responsible officials, including president, financial vive- president, treasures, controllers and directors. He concluded that a major portion of dividend of a firm would be expressed in following equations;

$$\text{Div B} t = PEPS_t \dots\dots\dots ʄ\!1 ^A$$

And,

$$\text{Div- Div}_{t-1} = a \, \Gamma b ʄ Div \, \text{B}t \, Z Div_{t-1} \, \text{A}\Gamma et$$

Where,

$$\text{Div}^* = \text{Earning}$$

P = Target Payout ratio.

a = Constant relating to dividend growth.

b = adjustment factors and new desired level of dividend work b<1.

The major findings of the study were:

a) Firms think in terms of proportion of earnings to be pay out.

b) Investment opportunities, liquidity, funds flow are not considered for modifying the pattern of dividend.

c) Firms generally have target payout ratio in view, which determines change in dividend per share (Linter, 1956)

Gordon's Study

Myron J. Gordon conducted a study in 1962. He has concluded policy of a firm has an effect on its value of share even in a situation, were the returns on investment and required rate of return are equal. In this model, he explains that those investors are not indifferent between current dividends and retentions of earnings. His study concluded dividends more than that of future capital gains. His arguments in his model insisted that a price of dividend payout ratio leads to increase the stock price for the reason that investors consider the dividends yield is less risky than the expected capital gain, Hence there is positive relationship between amount of dividend and stock prices. The basis assumptions of Gordon's study are as follows.

1. The firm uses equity capital only.

2. The firm has perpetual life.

3. Retained earnings are only one source for a new investment.

4. External rate of return (r) and appropriate discount rate (ξ_e) are constant.

5. The corporate tax does not exist.

6. The retained ratio (b) is once decided upon is constant. Thus the growth rate (g) is constant forever.

7. Discount rate is greater than growth rate. K>g.

Based on the above assumptions, Gordon provided the following formula to determine the market values of shares.

$$\upsilon_o \quad = \quad \frac{EPS \text{⅓} Zb \text{}}{\xi \text{ } Zbr} \quad = \quad \frac{DPS}{\overline{\xi \text{ } Zg}}$$

Where,

$$\upsilon \qquad = \qquad \text{Price Share.}$$

$$EPS \qquad = \qquad \text{Earning Per Share.}$$

$$b \qquad = \qquad \text{Retention Ratio} = 1 Z D / P \text{ ratio.}$$

$$1\text{-}b \qquad = \qquad \text{Percentage of earnings distributed as}$$

dividends

$EPS \int 1 Zb \, \lambda$ = dividend per share.

ξ = Capitalization rate or cost of capital.

g = $b \, \Beta r$ = growth rate

r = rate of return.

Finally, Gordon concluded that dividend and stock prices are negatively co-related in growth firms. For normal firms, Share value remains constant regardless of changes in dividend policy. It means dividend in stock prices are not co- related with other in normal firms. So, r= k, for declining firms, there is a positive co-relation between dividend and stock prices.(Gordon, 1962)

Walters Study

James E. Walter, (1966), conducted a study on dividend and stock prices. He proposed model for share valuation. According to him, the dividend policy of the firm affects the value of the shares. So, the dividends are relevant. He argues that the choice of dividend policies always affect the value of enterprise. His study shows clearly the importance of the relationship between internal rates of return(r) and its cost of capital (k) in determining the dividend policy.

The assumptions of the Walter's Model are as follows.

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

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

30

$$P \times \frac{DPS}{Ke} \Gamma \frac{\overline{Ke f EPS - DPS}Å}{Ke}$$

Where,

> P = Market value of an equity share (Market price per share)
>
> DPS = Dividend per share
>
> EPS = Earning per share
>
> r = Rate of return on the firm's investment
>
> Ke = Cost of capital/ capitalization rate.

According to Walters Model, the optimum dividend policy depends upon the relationship between the firm's internal rate of return and its cost of capital Walter suggested different dividend policy for different types of firms. There are three conditions, these are:

Growth Firm (r>k)

If the internal rate of return (r) is higher than the firms cost of capital (k), these firms are said to be growth firm. It will better to remain all net profit (r) exceeds to (k) indicate that the firm is very capable to earn more than that which the share holders could be re- invested, if the earnings are paid to them. The market value per share increases by decreasing rate, the dividend in such a situation. The market value of per share will be in maximum at zero dividends. For such firm optional dividend payout ratio is zero. The correlation between dividend and stock price is negative.

Normal Firm (r=k)

The firm having equal internal rate of return (r) and cost of capital (K) 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 shares. In such a situation, the market price of shares will remain constant for all dividend payout ratios from 0 to 100. This type of firm is called as normal firm. There is no optimum dividend policy for such a firm.

Decreasing Firm (r>k)

If the internal rate of return (r) of the firm is less than he cost of capital (k) it indicates that the share holders can earn higher return by investing elsewhere, the market value per share will increase by increasing rate, the dividend in such a situation. Such type of firm is called a declining firm. By distributing the entire earning as dividend, the value of the share will be at optimum level. This dividend payout ratio of 100% would be an optimum dividend policy.

Figure: 2.1

Walters Study

r=k

r=k   r<k

Return and cost %

Earning, investment and new financing
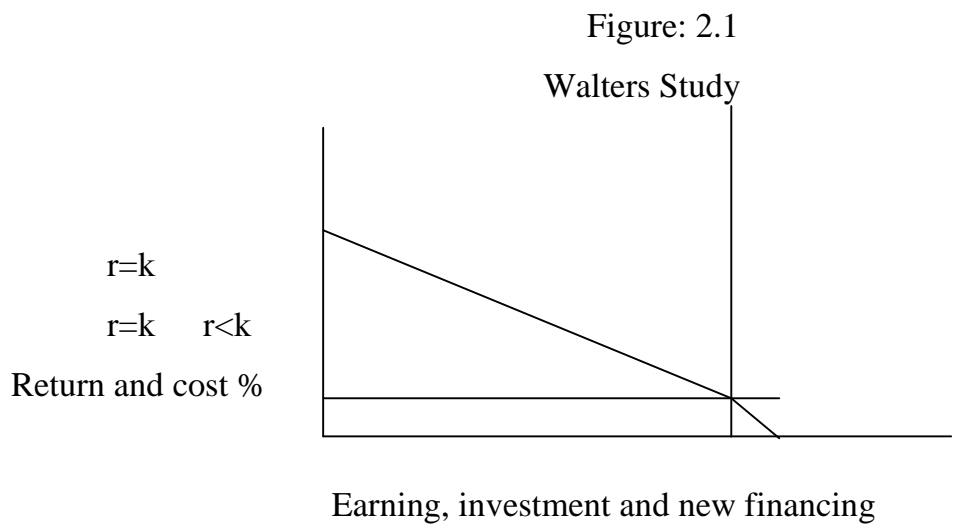
Conclusion

According to Walter, when the internal rate of return (r) is greater than cost of capital (k) then the dividends is negatively correlated with stock prices. When the internal rate of return (r) and cost of capital (k) of the firm is equal than there is no relationship between dividends and stock prices. i.e. Dividend is different to variation in market price of shares (Walter, 1996)

Van Horne and Ml Donald's Study

Van Horne and Ml Donald concluded a comprehensive study of 86 electric utility firms and 39 electronics and electric components industries by using cross sectional regression model in 1968 to know the combined effect of dividend policy and new equity financing decision on the market value of the firm's common stock.

From their study they concluded that the market price of shares was not affected by new equity financing in presence of cash dividend except for these in the highest new issue group and it made new equity more costly from of

financing than retention of earning. They also indicated that the payment of dividend through excessive equity financing reduces the market price of shares. (Van Horne and Donald's, 1971)

Chawala and Shrinivasan's Study

This study is also focused on the impact of dividend and retention market price of stock. They estimated cross sectional relationship of 18 chemical and 13 sugar industries for the year 1963 to 1973. The basis objectives of the study are:

1. To set a model which explains the relationship between share price, dividend and retained earning?
2. To test the dividend, retained earning hypothesis.
3. To examine the structural changes in the estimated relations overtime.

To achieve above objectives, they used simultaneous equation model as developed by friend and puckeet in 1964. The unspecified form of the model in as follows:

Price Function,

$$\upsilon_t = F f D_t, R_t, P/E_{t-1} A$$

Dividend Supply Function.

$$D_t = F f E_t, D_{t-1}, P/E_{t-1} A$$

Identity, $E_t = D_t + R_t$

<u>Where,</u>

P = Market price of shares

D = Dividend per share

R = Retained Earning per share

E = Deviation from the sample, Average of price earning ratio.

P/E = Deviation from the sample, Average of price earning ratio.

t = Subscript for time.

They used two stage least square techniques for estimation. They found that the estimated coefficient had a correct figure and coefficient of determination of all equation was higher in case of chemical industry, which implies that the stock price and dividends paid variation can be explained by

their independent variables, but in case of sugar industry the sign for retained earnings in negative.

From their study they concluded that both dividend and retained earnings significantly explains the variations in shares price of the industry. (Chawala and Shrinivasan's, 1987).

Review of Journal and Articles

Manohar K. Shrestha's Study

An article, "Public enterprises; Have they divided paying ability ?" was published in 1981 by D.r. Manohar Krishna Shrestha, which gives short glimpse of the dividend performance of some public enterprises of that time in Nepal.

Dr. Shrestha has highlighted following issues in his article:

➢ HMG expects two things from his public enterprises:

➢ They should be in a position to pay minimum dividend.

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

➢ One of reasons for this efficiency is caused by excessive government interference in day to-day affairs. On the other hand, high-ranking officials of the HMG 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. Losing corporation therefore not in position to pay dividend to government.

➢ Another reason is the lack of self- criticism and self – consciousness. The lack of favorable leaders is one of the biggest constrains to institution building moreover corporate leadership comes manager of corporations have not been able to identify themselves regarding what they can contribute as manager of corporations. So, HMG must be in a position to drop a financial target in corporate investment by imposing financial obligation.

- The article point out irony of government bias well that government has not allowed banks to follow an independent dividend policy and HMG is focused to have pressurized on dividend payment in case of Nepal Bank Ltd, regardless of profit. But it has let off Rastriya Banijya Bank from dividend obligation in spite of considerable profit.

Need of criteria suggested by Dr.Shrestha are:

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

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

3. If HMG wants to tap resources through dividend the following criteria should be followed.

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

5. Proper evaluation of public enterprise in terms of capability of paying dividend should be made through corporation coordination committee.

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

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

8. Identification of corporation objectives in Corporation Act, Company Act or special character so as to clarify the public enterprises managers regarding their financial obligation to dividend to HMG.

Radheshyam Pradhan's

Radheshyam Pradhan has concluded that his study on stock market behavior in the year 1992 in his study, he collected the data of seventeen companies from the year 1986 to 1990 by the inspirations of the following objectives:

- To access the stock behavior in Nepal.

➢ To examine the relationship of market equity, market value or book value, price earning and dividends with liquidity, leverage, assets turn over and interest coverage.

The conclusion of the study related to dividend behavior is as follows:

➢ Higher earning on stock leaders the larger ratio of DPS.

➢ Stock with larger ratio of dividend per share to market price have lower leverage ratio.

➢ Positive relationship between the ratios of DPS to market price and interest coverage.

➢ Positive relationship between dividend payout and turnover ratios.

➢ Positive relationship between dividend to pay out and liquidity.

➢ Positive relationship between dividend pay out and profitability.

➢ DPS and MPS are positively correlated.

2.3 Review from the thesis

There are few theses available which have looked into corporate divided behavior. The available thesis reviewed as follows:

Nitin Niroula's Study

Dividend Policy and Effect on stock price with Reference to commercial banks conducted by Mr. Nitin Niroula carried out by using the secondary data of five commercial bank in 2009.

Objectives of the study are as follows:

➢ To compare the various aspects of dividend policy of the selected commercial banks.

➢ To analyze the dividend policy and its effect on stock price changes.

➢ To find out the relationship between the dividends with earnings, stock price and net worth.

➢ To provide applicable suggestion on the basis of findings.

Major Findings of the study

➢ The average earning per share of banks did not seem satisfactory except for SCBML and NABIL. The coefficient of variation indicates that except for NSBL, other banks; EPS seem satisfactory. The C.V ranges

from 59.32% to 9.56%. Among the banks under the study, SCBNL had highest average EPS with highest degree of fluctuation.

➤ The average DPS showed that there was no consistency in payment of dividend. The C.V ranged from log.82 % to 15.21%. Among the banks under study, SCBNL had the highest average DPS, and NSBL had the lowest. Except for SCBNL, other banks had high degree of fluctuation in dividend payment.

➤ The analysis of DPR also showed high degree of fluctuation for other banks except for SCBNL. The fluctuation ranged from 117.38% to 19.48%. The study shows that HBL has the lowest DPR.

➤ The analysis of MPS also showed that the average MPS of the MPS had quite high level of fluctuation. SCBNL had the highest average MPS followed by NABIL. Among the banks under study, NABIL had highest level of fluctuation whereas HBL and NIBL had low level of fluctuation.

➤ The average dividends yield of the banks ranged from 4.53% to 0.62%. Among the banks SCBNL had the highest dividend yield with low level of fluctuation. The fluctuation of dividend yield ranged from 129.17% to 49.50%.

➤ The analysis of net worth per share should that SCBNL has the highest average NWPS and NSB L had the lowest. The C.V indicated that there was a moderate level of fluctuation in NWPS of the banks under the study.

b.   Padma Bhattrai's Study

A comparative study of dividend pattern selected Nepalese Commercial Banks conducted by Miss Padma Bhattrai was carried by using the secondary data of four commercial banks in 2008.

Objectives of the study are as follows:

➤   To identify what types of dividend policy being followed and find out whether the policy is appropriate or not.

- To test the relationship between EPS and DPS; EY and DY; EPS and MPS.
- To know whether there is any uniformity among EPS, DPS and DPR of the selected banks or not.

Major Findings of the study:

- The average earning per share of related banks are satisfactory. In which SCBNL is in highest (i.e. Rs. 156) position among four banks but NIBL is in lowest (Rs 50.54) among this banks. Other had EBL (Rs 54.04) and HBL (Rs 53.26) is the middle position from the highest lowest.
- DPS is not satisfactory SCBNL paid highest (Rs 108) average dividend per share but EBL paid only- Rs 7 as dividend per share and it is followed by NBIL and EBL from highest to lowest dividend per share to its share debt. But EBL paid only Rs.7 as dividend per share, and it is followed by NBIL and EBL from highest to lowest dividend per share to its share-holders.
- EPS and DPS of EBL have largest fluctuation and EPS and DPS of SCBNL has lowest fluctuation consistent among four banks. EPS of NBIL and HBL is followed the high fluctuation. Similarly, DPS of HBL and NIBL is followed the highest fluctuation from the highest to lowest.
- Fluctuation in dividend percentage is highest in case of EBL (164.51%) while consistent in case of 19.95% of SCBNL among concerned banks.
- Fluctuation of P/E ratio of SCBNL is 51.12 and consistent of P/E ratio of NIBL is 16.81.

c. **Rishi Raj Gautam's Study**

A comparative study of dividend policy in commercial banks conducted by Mr. Rishi Raj Gautam was carried out by using the secondary data of their commercial banks in 1998.

Objectives of the study are as follows:

- To identify what type of dividend policy being followed and find out whether the policy followed is appropriate or not.
- To examine the impact of dividend on share prices

> ➢ To identify the relationship between DPS and other financial indicators.

> ➢ To know if there is any uniformity among DPS, EPS and DPR of three sample commercial banks.

Major findings of the study are as follows:

> ➢ Average earning per share and dividend per share are all concerned banks are satisfactory.

> ➢ Analysis indicates that there is the largest fluctuation in EPS and DPS, on the other have relatively more consistency dividend per share in all the sample banks.

> ➢ No commercial banks seem to be guided be clearly defined dividend strategy in spite of the good earnings and potentials.

> ➢ Shares of the financial institution are actively traded and market prices are increasing.

> ➢ Commercial banks represent a robust body of the profit earning organization in comparison to the other sectors such as manufacturing trading etc.

> ➢ One of the most striking findings of the study is that no commercial bank sample for this study has clearly defined strategy. On the other hand, there is significant relationship perceives between earnings and dividend of expansions program.

> ➢ One of most striking finding of this study is that no commercial banks sample for this study has clearly defined dividend strategy. On the other hand, there is significant relationship perceives between earnings and dividend expansion program.

> ➢ It is necessary to research about the dividend policy in joint venture commercial banks taking large number of sample and do wide spread analysis in above variables.

Through there were above mentioned studies are related to dividend behavior in Nepalese Context. It was now become necessary to find out where their findings are still valid or not. In Nepalese context, many more changes have taken place in last few years. So, it is necessary to carry out a

fresh study related to dividend pattern of Nepalese companies. In this study, it is tried to carry out the latest data for different companies for analyzing the dividends have became old and need to be updated and validated.

It is found that research has been conducted by taking the sample companies, which the researcher has selected in this research. So, it is believed that this study will be different than earlier research.

CHAPTER-III
RESEARCH METHODOLOGY

3.1 Introduction

The research methodology is a systematic way of solving research problems. Methodology refers to the overall research process. The study uses secondary data and observed data is analyzed with using appropriate financial and statistical tools.

The main purpose of this chapter is to discuss the research methodology such as research design, population and sample, data collection techniques and analytical tools of the research study. It is widely accepted that research is simply the process of arriving at dependable solution to problem through the planned and systematic collection, analysis and interpretation of data. It is most important tools for advancement of knowledge and accomplishment of purposes.

3.2 Research Design

The research design refers to the conceptual structure within which the research is conducted (Kothari: 1978). A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose within economy in procedure (Selltiz:1962). N. Krelings has defined it in his book foundation of Behavioral research as "Research Design is the plan, structure and strategy of investigation concerned so as to obtain answers to research questions and to control variances. In simple language, it's just a planning for a research. It purposeful scheme of action proposed to be carried out in a sequence during the process of research design helps researcher to enable him to keep track of action and to know whether he was moving in the right direction to achieve his goal.

This study is related to the dividend policy and its impact no the share price and wealth position of the shareholders. Therefore, the descriptive e as well as the analytical approaches is adopted here. To make the analysis, more effective statistical tools and testing models are also used.

3.3   Sources of Data:

The study is mainly depending upon the secondary data of the selected companies, whose sources may include the Annual Reports of the corresponding companies under study, Economic Report published by Nepal Rastra Bank, the stock price for the whole year listed in the   Nepal Stock Exchange (NEPSE), Economic Survey published from Government of Nepal (NG), Ministry of finance, Financial Reports published by NEPSE and Securities Exchange Board and other relevant data regarding the dividend policies and practices of the Banks. Besides this, the data are also collected from various newspapers, magazines, booklets and journals published by the concerned governmental and non-governmental organizations.

3.4   Population and Sample

There are more than hundred companies that have shares trading actively in stock market; hence' it doesn't seem reasonable to study all the companies regarding the study topic. Due to the limited time and resource factor too, it is possible to study all of them; so sampling will be done. There should be no confusion with parameters w and size of the companies since the topic is not related to the comparison of sizes, but the dividend policy and its effect on market price of shares or simply, the valuation of shares. This study has covered altogether three commercial banks as follows:

Nepal Arab Bank Limited (NABIL)

Nepal Investment Bank Limited (NIBL)

Himalayan Bank Limited (HBL)

Bank of Kathmandu Limited (BOKL)

3.5   Tools and Techniques

Data collected from various sources have been properly, analyzed and presented in appropriate tables and formats. Such tables and formats are subjected to interpretations and explanation as necessary. Specific financial tools and statistical tools are used to analyze variables. Mainly, the analysis has been done using following tools and methods.

1. Market Price Per Share (MPS)

It indicates the selling price of one share in the market. Here, MPS we mean the average market price per share. It is calculated as :

$$MPS = \frac{Opening\ MPS + Closing\ MPS + High\ MPS + Low\ MPS}{4}$$

2. Earning Per Share (EPS)

Earning per share refers the rupee amount earned per share of common stock outstanding. It measures the return of each equity shareholders. It is also identified to measures the profitableness of the shareholders investment. The earning per share simple shows the profitability of the banks on a per share basis .The higher earning indicated the banks mobilizing their funds and vice versa. In other words, higher equity per share denotes the strength and lower earning per share indicates the weakness of the banks.

Earning per share in computed to know the earning capacity and to make comparison between concerned banks, this ratio can be computed by dividing the earning available to common shareholders by the total numbers of common stock outstanding of banks. Thus,

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

3. Dividend in Percent

Dividend in percent indicates that the ratio of dividend per share to the paid up price per outstanding share. It is obtained by dividend per share paid up capital per share.

$$Dividend\ in\ Percent\ (\%) = \frac{Dividend\ per\ Share}{Paid\ up\ capital\ per\ share.}$$

4. Divided Per Share (DPS)

The part of earning distributed to the share holders as per share basis is known as DPS. It is the amount calculated by dividing the total dividend with total numbers of shares outstanding.

DPS = Total Dividend

No. of common shares outstanding

5. Dividend Payout Ratio (DPR)

The percentage of the profit on share, which is distributed as divided, is called dividend payout ratio (DPR). 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 the bank. It is calculated with purpose of knowing earning's power and divided policy of selected banks.

Mathematically it is calculated as;

Dividend Payout Ratio (DPR) = Dividend Per Share (DPS)

Earning Per share (EPS)

6. Retention Ratio

It is the ratio of earnings not distributed to total earnings and the retention is also calculated as followings.

Retention ratio= 1- Dividend payout ratio

Retention ratio= 1- DPR

or,

Retention ratio = Retained earning per share

Earning per share

7. Price Earning Ratio (P/E ratio)

P/E Ratio Expresses the amount currently paid to each rupee of currently reported by the balance sheet of company's earning per share by the market. It is calculated using following formula.

P/E Ratio= Market Value per share (MPS)

Earning Per share (EPS)

8. Dividend Yield (DY)

Dividend Yield is a percentage of dividend per share on market price per share. It measures the dividend in retain to market value per share so, the dividend yield is the dividend received by the investors as a percentage of market prices per share in the stock market.

Mathematically,

Dividend Yield (D/Y)= <u>Dividend Per share (DPS)</u>   X 100%

Market Price per share (MPS)

3.6 Statistical Tools

The various statistical tools have been used for the analysis and interpretation of the study. In the study, the following statistical tools are to analyze the relationship between dividend and other variables.

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

The most popular and widely used measure of central tendency is the arithmetic mean or simply the mean. Arithmetic mean is the sum of all the observations on dividend by the number of observation is called arithmetic mean. It represents the entire data by a single value. In this study, the data related to dividend are tabulated and drawn out average over different years.

Mathematically,

$$\overline{\text{Mean}(x)} = \frac{x}{n}$$

Where,

x = The sum of observation

N = No. of observations

2. Standard Deviation (†)

Standard deviation measures the dispersion. In other words, SD shows that in what extent the given value is far from the central value. Higher the value S.D indicates he greater deviation from central value and vice versa. It is absolute measurement of dispersion. The study has used these tools to know the dispersion of each financial indictor of selected bank.

Mathematically;

$$† = \sqrt{\frac{f\epsilon\ Z\overline{\epsilon}\ )}{n\ Z1}}$$

Here,

Sigma used to denote standard deviation.

ε   = Set of observation

$\overline{X}$ = Arithmetic Means

ρ   = Number of observation

3. Co-efficient of variation (C.V)

Co-efficient of variation (C.V) is the most commonly used measures of relative variation. It is used in such problems where to compare the variability of two or more than two series. "The coefficient of variation (C.V) is the relative based on the standard deviation and is defined as the ratio of the standard deviation to the mean expressed in percent." (K.N Shrestha, 1996). The series for which the co-efficient of variation is greater is said to be more variables or conversely less consistent, less uniform, less stable or less homogenous. On the other hand, the series for which co-efficient of variation is less said to be less variables or more consistent, more uniform, more homogenous. Co-efficient of variation is denoted by CV and is obtained as follows.

$$\text{Co- efficient of Variation (C.V)} = \frac{\sigma}{\overline{x}} * 100$$

Where,

      C.V   = Co-efficient of variation

      ∃   = Standard deviation

      $\overline{X}$ = Arithmetic Mean.

4. Correlation of Coefficient (r)

Co-efficient of co-relation is an analytical tool for measuring co-variation between two or more variables. In other words, it measures the closeness of one variable with other variables. The relationship may be positive or negative which depends upon on their movement. If variables move to the same directions, the co-relation will be positive and if the variables move to opposite directions from each other, then the co-relation will be negative. It is calculated to show the relationship between MPS and DPS, MPS and EPS, Earning yield and Dividend yield, EPS and DPS, Dividend multiple and price earning ratio and market capitalization with EPS and DPS.

Mathematically;

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

Where,

r	=	Karl persons correlation co-efficient
ρ	=	Total number of observation
xy	=	Sum of the value of two variables multiplied.
x	=	Sum of the value of variables of 'ε'
y	=	sum of the value of variable 'Y'
x^2	=	sum of the squared value of variable 'X'
y^2	=	sum of the squared value of variable 'Y'
$(x)^2$	=	squared of the value of variable of 'X'
$(y)^2$	=	squared of the value of variable of 'Y'

5. Regression Analysis

Regression analysis helps in estimating the value of variable from the known value of another variable. This variable is mostly used in economics and business research. The variables, which variables is to be found out is called dependent variables and the variable whose value is known, and with the help of these value we can estimate, is called independent variables. If there is only one independent variables used in regression then it is called simple regression and if there are more than two variables then it is called multiple regression. Simple regression can be expressed as:

$$\psi = a + bx$$

Where,

ψ	=	Value of dependent variables
a	=	intercept, that does not vary with the fluctuation in independent variable.
ε	=	Value of independent variable.

Multiple regressions can be expressed as:

$$Y = a1 + b1x1 + b2x2 + b3x3 + \ldots\ldots b_{n+} x_n$$

Where b1,b2…….b3 = regression coefficient of each independent variables which estimates the change in dependent variable for each unit change in that independent variable in regression model.

6. T- Statistics

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

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

Where,

b= Regression coefficient

S_b = Standard Error of Beta coefficient

[Note: Standard Error of Beta Coefficient (S_b)= $\dfrac{S.E.E}{\sqrt{(X\ Z\bar{X})^2}}$

7. F-test

The technique of analysis of variance enables us to test for the significance of the difference between more than two samples variance, we use F- test, the difference between two samples means can be studied through t- test but to examine the equality between two or more sample variable at one and same time, ANOVA is used. Here, one- way ANOVA method is used to examine the equity between sample variables.

Formula:

F= $\dfrac{\text{Various between samples}}{\text{Various within samples}}$

OR,

$$F = \frac{\text{Sum of square due to row or between banks}}{\text{Sum of square due to error or within banks.}}$$

8. Standard of Error of Estimate

Standard of Error of Estimate measures the line variability or scatter of the observed value around the regression line. It also measures the reliability after finding the regression. If the S.E. of estimate happens to be zero, then there is cent percent estimator. In other words, the estimating equation of the dependent variable is a 'perfect' estimator. It is possible for us to ascertain how good and representative the regression since is a description of the average relationship between two series. The square root of the S.E is also known as the variance of error term which is the basis measuring of reliability.

$$\text{S.E.} = \sqrt{\frac{\phi e^2}{N\, Z2}}$$

e $\quad$ = Error term

S.E. $\quad$ = Standard Error

N $\quad$ = Number of observations

9. Probable Error (P.E.)

Probable error of the correlation coefficient denoted by P.E. is the measure of testing the reliability of the calculated of 'r'.

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

) If r<P.E., it is insignificant so perhaps there is no evidence of correlation.

) If r>P.E., it is significant. The P.E. of correlation coefficients may be used to determine the limits within which the population correlation lies. Limit for population correlation coefficient of r = P.E.

CHAPTER-IV

DATA PRESENTATION AND ANALYSIS

The purpose of this chapter is to carryout data analysis. In this chapter, collected data and other information on dividend policy and its impact on cash dividend in the market of commercial banks are presented. This chapter concentrated in presentation and analysis of data. This chapter attempts to analysis of earning per share, dividend per share, dividend payout ratio, dividend yield ratio, price earning ratio, market value per share on book value per share, earning yield ratio, correlation between EPS and DPS, correlation, correlation between EPS and MPS, simple regression analysis between DPS and EPS, simple regression analysis between MPS and EPS of selected commercial banks. Presenting and analyzing data is the important part of the research. Thus, to achieve our objective of the study, we analyze the data with the help of above financial tools. In this chapter, we will attempt to make a comparison among the concerned banks.

4.1 Analysis of Financial Tools

4.1.1 Earning Per Share (EPS)

Earning per share (EPS) is one of the most important financial indicators which measures the earning capacity of the firm. It measures the profitableness of the shareholders investment on per share basic. It is computed by dividing net profit after taxes by the total number of common stock outstanding.

Table 4.1

Analysis of Earning Per Share

Year	NABIL	NIBL	HBL	BOK	Pooled
2008/09	113.44	37.4	61.90	54.68	66.86
2009/10	83.81	52.5	31.80	43.08	52.80
2010/11	70.67	39.1	44.66	44.51	49.74
2011/12	83.23	27.6	39.94	37.88	47.165
2012/13	95.14	46.2	34.19	36.64	53.04
Mean	89.26	40.56	42.50	43.36	53.92
S.D	14.36	8.42	10.69	6.40	6.82
C.V%	16.09	20.76	25.15	14.76	12.65

Sources: Appendix 1 (A)

Figure: 4.1

Bar Diagram Showing Earning Per Share
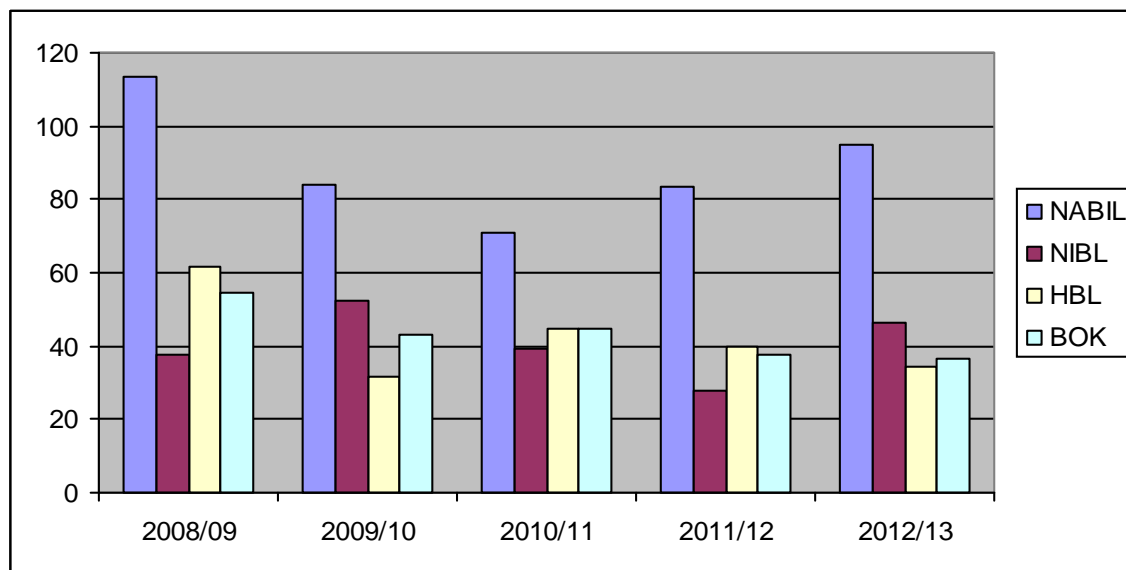
In the above table 4.1, it shows pooled average, S.D, C.V of the NABIL, NIBL and HBL and BOKL from 2008/09 to 2012/13. The performances and the achievement of business organizations are measured in terms of its capital to general earnings higher earning shows higher strength while lower earnings weaker strength of banks.

In the year 2008/09, the table shows that EPS of NABIL has higher which amount to Rs 113.44 while NIBL, HBL and BOKL have 37.4, 61.90 and 54.68 respectively and their pooled average is 66.96. . NIBL, HBL and BOKL have lower EPS than pooled average. It means EPS of NABIL is growing and is in better condition than other banks.

In the year 2009/10, again EPS of NABIL has higher, which amount to Rs.83.81 while NIBL< HBL and BOKL have 52.5, 31.80 and 43.08 respectively and their pooled average is 52.80, the NIBL, HBL and BOKL have lower EPS than pooled average and NABIL has higher EPS than pooled average. EPS of NABIL is growing than other three banks.

In the year 2010/11, again EPS of NABIL is higher than NIBL, HBL and BOKL. EPS of NABIL is 70.67 and EPS of NIBL, HBL and BOKL is 39.1, 44.66 and 44.51 respectively which is lower than the pooled average 49.74. NABIL has higher EPS than pooled average.

In the year 2011/12, again NABIL has highest EPS that amount to 95.14 and NIBL, HBL and BOKL have 46.2, 34.19 and 36.64 which amount is lower than pooled average. The pooled average is 53.04, NABIL has lower EPS than before year EPS.

Finally, the average EPS of NABIL, NIBL and HBL and BOKL are 89.26, 40.56, 42.50 and 43.36 respectively which NABIL has the highest average of EPS which is better than other banks and S.D. of NABIL, NIBL, HBL and BOKL have 14.36, 8.42, 10.69 and 6.40 respectively and C.V of NABIL, NIBL, HBL and BOKL have 16.09%, 20.76%, 25.15% and 14.76% respectively. HBL has highest C.V. which indicates that higher risk and higher return.

4.1.2 Dividend Per Share (DPS)

Dividend per share is another important financial indicator. DPS indicates the proportion of earning distributed to a each equity shareholder. Generally higher DPS creates positive attitude towards the bank which help to increase the market value of shares. It is calculated by dividing the total dividend distributed to equity shareholders by total number of equality shareholders the dividend per share of the banks under study are stated in the table below:
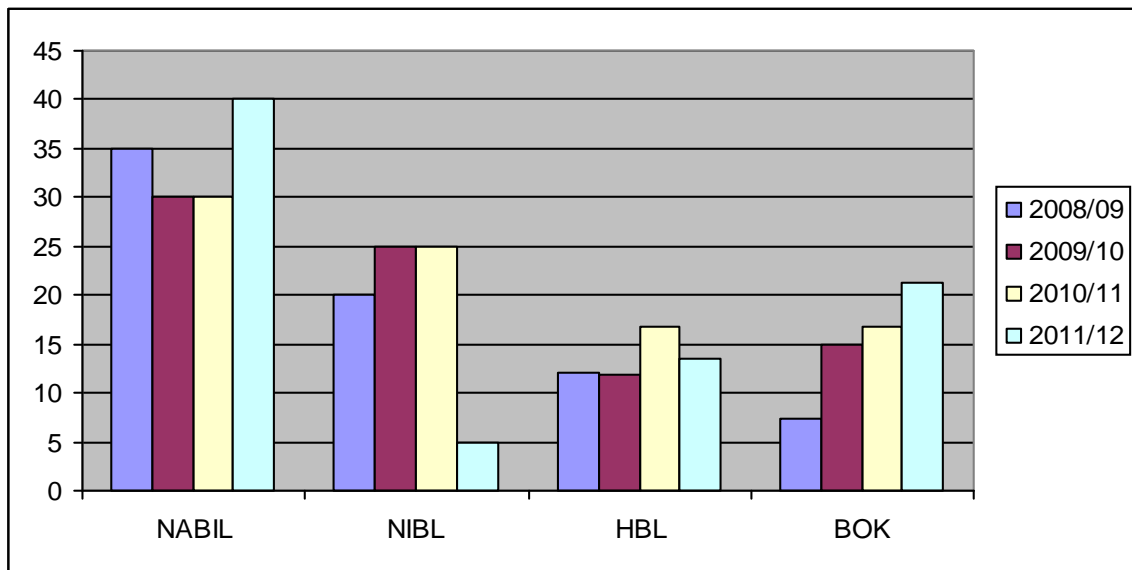
Table 4.2

Analysis of Dividend Per Share

Year	NABIL	NIBL	HBL	BOK	Pooled
2008/09	35	20	12	7.37	18.59
2009/10	30	25	11.84	15	20.46
2010/11	30	25	16.84	16.75	22.15
2011/12	40	5	13.42	21.32	19.69
2012/13	40	25	10	0.74	18.94
Mean	35	20	12.82	12.24	20.02
S.D	4.47	7.75	4.44	7.30	1.27
C.V%	12.77	38.73	34.66	59.64	6.34

Source: Appendix 1(B)

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Figure 4.2

Bar Diagram Showing Dividend Per Share

The above table 4.2 shows the dividend per share of NABIL, NIBL, HBL and BOKL with pooled average, S.D. and coefficient of variation.

In the year 2008/09, NABIL has highest DPS that amount is 35 per share and NIBL, HBL and BOK distribute 20, 12, 7.37 dividend per share respectively. NABIL distributed higher dividend than NIBL, HBL and BOKL. It is better for shareholders'. It's pooled average 18.59. NABIL has better condition than other banks.

In the year 2009/10, the table shows that DPS of NABIL has higher which amount to 30 while NIBL, HBL and BOKL have 25, 11.84 and 15 respectively and their pooled average is 20.46. NIBL, HBL, BOKL have lower DPS than NABIL. It means DPS of NABIL is growing and is in better condition than other banks.

In the year 2010/11, NABIL has highest DPS that amount is 30 per share and NIBL, HBL and BOKL distribute 25, 16.84 and 16.75 per share respectively. NABIL distributed higher dividend than NABIL, HBL and BOKL. After NABIL, NIBL distribute higher dividend than HBL and BOKL. NABIL has better than HBL and BOKL. NABIL has better condition than other banks.

In the year 2011/12, the DPS of NABIL, NIBL, HBL and BOKL are 40, 13.42 and 21.32 respectively. Among four banks, NABIL distribute higher dividend than NIBL, HBL and BOKL. After NABIL, BOKL distribute higher dividend than NIBL and HBL. The pooled average is 19.69 and NABIL has better condition.

In this year 2012/13, NABIL again distribute higher dividend than NIBL, HBL and BOKL. After NABIL, NIBL distribute higher dividend than HBL and BOKL. The pooled average is 18.94 and DPS of NABIL is growing than other three banks.

Finally, the average of NABIL, NIBL, HBL and BOKL is 35, 20, 12.82 and 12.24 respectively. NABIL has highest average of DPS and which is better than other banks and the S.D. of NABIL, NIBL, HBL and BOKL have 4.47, 7.75, 4.44 and 7.30 respectively. The C.V. of NABIL, NIBL, HBL and BOKL has 12.77%, 38.73%, 34.66% and 59.64%. So, NABIL has the satisfactory DPS.

4.1.3 Dividend Payout Ratio (DPR)

Dividend Payout Ratio is the proportion of earning paid in the form of dividend. It shows what percentage is retained as reserve and surplus for the growth of the companies. It is calculated by dividing DPS by EPS. The following table shows the DPR of NABIL, NIBL, HBL and BOKL.
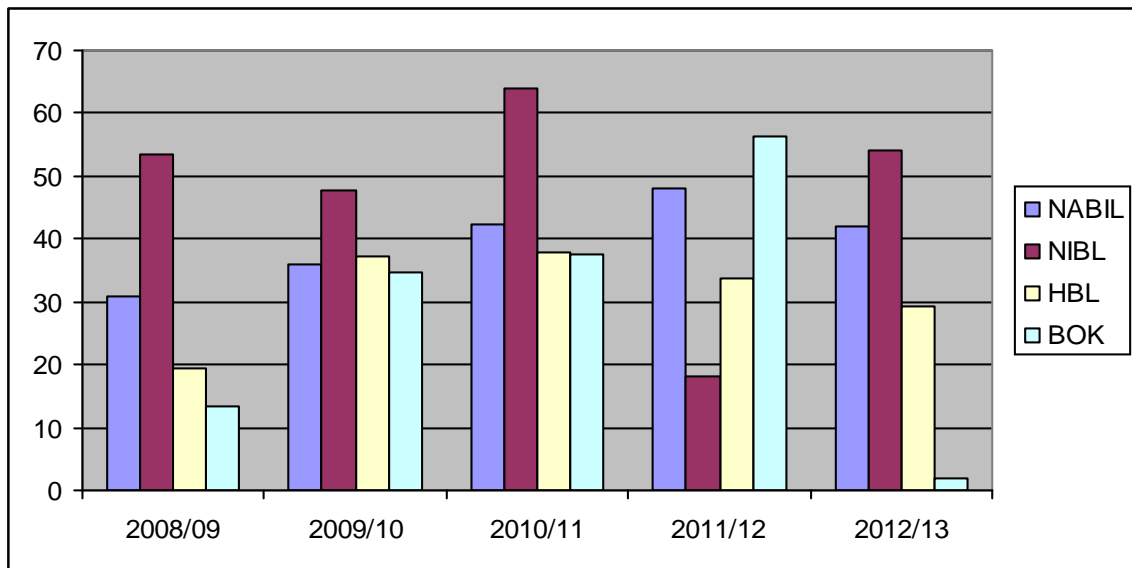
Table 4.3

Analysis of Dividend Payout Ratio

Year	NABIL	NIBL	HBL	BOK	Pooled
2008/09	30.85	53.48	19.39	13.48	29.3
2009/10	35.80	47.62	37.23	34.82	38.87
2010/11	42.45	63.94	37.71	37.63	45.43
2011/12	48.06	18.12	33.60	56.28	39.02
2012/13	42.04	54.11	29.25	2.02	31.86
Mean	39.84	47.45	31.44	28.85	36.90
S.D	5.94	15.58	6.75	19.09	5.73
C.V%	14.91	32.82	21.45	66.15	15.53

Source: Appendix 1 (C)

Figure 4.3

Bar Diagram Showing Dividend Payout Ratio

The above table 4.3 shows that the dividend payout ratio of NABIL, NIBL, HBL and BOKL with pooled average, standard deviation and coefficient of variation which is the percentage of dividend paid out of the total earnings made, before analyzing the DPR we can segregate the DPR of these companies 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%.

In the year 2008/09, NABIL follows moderate dividend policy. It has 30.85 dividend payout ratio. NIBL has aggressive dividend policy. It has 53.48 dividend payout ratio. HBL and BOKL have conservative dividend policy. NIBL has highest DPR among four banks. It shows that NIBL bank paid dividend to shareholder is good and good condition among three banks.

In the year 2009/10, NABIL, NIBL, HBL and BOKL have below 50% which DPR ratio is 35.80, 47.62, 37.23 and 34.82 respectively. All four banks follow moderate dividend policy. Their pooled average is 38.87.

In the year 2010/11, NIBL follows aggressive dividend policy, NIBL has 63.94 which is greater than 50%. NABIL has 42.45 DPR and HBL has

37.71 DPR and BOKL has 37.63 DPR which is less than 50%. They follow moderate dividend policy. The pooled average is 45.43. NIBL have higher DPR less than pooled average.

In the year 2011/12, NABIL and HBL follow the moderate dividend policy. They show their DPR is less than 50%. NABIL has 48.06 and HBL has 33.60. NIBL have 18.12 DPR so, it follows conservative dividend policy but BOKL have better DPR than NABIL, NIBL and HBL. BOKL has 56.28 DPR, BOKL follows aggressive dividend policy.

In the year 2011/13, NIBL follows aggressive dividend policy. It has 54.11 dividend payout ratio. NABIL follows moderate dividend policy. It has 42.04 dividend payout ratio. HBL and BOKL follow conservative dividend policy. It shows that NIBL bank have higher DPR than pooled average 31.86.

Finally, the S.D. of NABIL, NIBL and BOKL have 5.94, 15.58, 6.75 and 19.09 and C.V of NABIL is 14.91%, NIBL is 32.82%, HBL is 21.45% and BOKL is 66.15%. It indicates that less C.V. is better. In overall NABIL Bank is better than NIBL, HBL and BOKL.

4.1.4 Price Earning Ratio (P/E Ratio)

The table shows P/E Ratio of NABIL, NIBL, HBL and BOKL. This ratio describes the relationship between EPS and MPS. It is computed by dividing MPS by EPS.
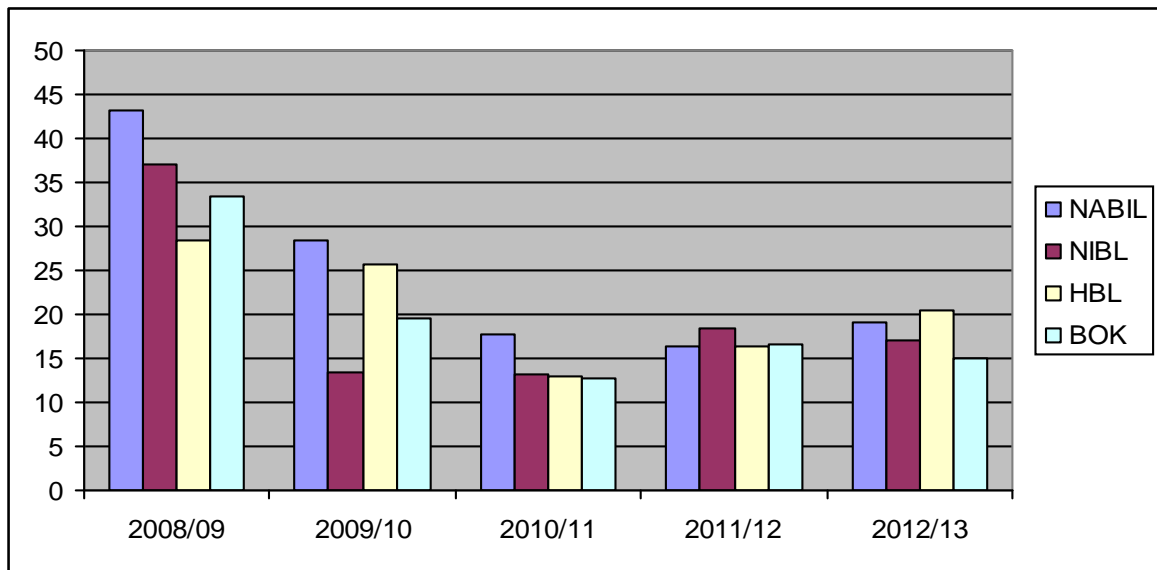
Table 4.4

Analysis of P/E Ratio

Year	NABIL	NIBL	HBL	BOK	Pooled
2008/09	43.19	37.11	28.43	33.38	35.53
2009/10	28.45	13.43	25.66	19.50	21.76
2010/11	17.72	13.17	12.88	12.81	14.15
2011/12	16.28	18.51	16.35	16.58	16.93
2012/13	19.08	16.97	20.47	15.09	17.90
Mean	24.94	19.84	20.76	19.47	21.25
S.D	10.07	8.88	5.74	7.29	7.54
C.V%	40.37	44.73	27.65	37.42	35.50

Source: Appendix 1(D)

Figure 4.4

Bar Diagram Showing P/E Ratio

The above table shows that the P/E Ratio of NABIL, NIBL, HBL and BOKL.

In the year2008/09, the P/E ratio of NABIL, NIBL, HBL and BOKL is 43.19, 37.11, 28, 28.43 and 33.38 respectively where NABIL has the highest P/E ratio among these four commercial banks and HBL has the lowest P/E ratio. The pooled average is 35.53 and NABIL has better condition.

In the year, 2009/10, NABIL has the highest P/E ratio than NIBL, HBL and BOKL. NABIL has 28.45, NIBL has 13.43, HBL has 25.66 and BOKL has 19.50. The pooled average is 21.76. NABIL has better condition.

In the year 2010/11, the P/E ratio of NABIL, HBL and BOKL is 17.72, 13.73, 12.88 and 12.81. Among these four banks, P/E ratio of NABIL is in better condition.

In the year 2011/12, the P/E ratio of NABIL, NIBL, HBL and BOKL is 16.28, 18.51, 16.35 and 16.58. Among these four banks, the P/E ratio of NIBL is in better condition.

In the year 2012/13, NABIL has 19.08, NIBL has 16.97, HBL has 20.47 and BOKL has 15.09. The pooled average is 17.90. Among these four banks, P/E ratio of NBL is in better condition.

Finally, the S.D. of NABIL, NIBL and HBL and BOKL have 10.07, 8.88, 5.74 and 7.29 and C.V of NABIL is 40.37%, NIBL is 44.73%, HBL is 27.65% and BOKL is 37.42%. In overall HBL Bank is in better condition than other banks i.e. NABIL, NIBL & BOKL.

4.1.5 Share Price Analysis

This analysis shows that the market price of share of each selected banks. So, inter bank comparison can be made. Similarly coefficient of variation is also calculated to find out the uniformity of the given sample banks.

Table 4.5

Analysis of Market Price Per Share

Year	NABIL	NIBL	HBL	BOK	Pooled
2008/09	4899	1388	1760	1825	2468
2009/10	2384	705	816	840	1186.25
2010/11	1252	515	575	570	728
2011/12	1355	511	653	628	786.75
2012/13	1815	784	700	553	963
Mean	2341	780.6	900.08	883.2	1226.4
S.D	1340.15	321.74	436.64	481.89	640.98
C.V%	57.25	41.22	48.51	54.56	52.27

Source: Appendix 1(E)

Figure 4.5

Bar Diagram Showing MPS
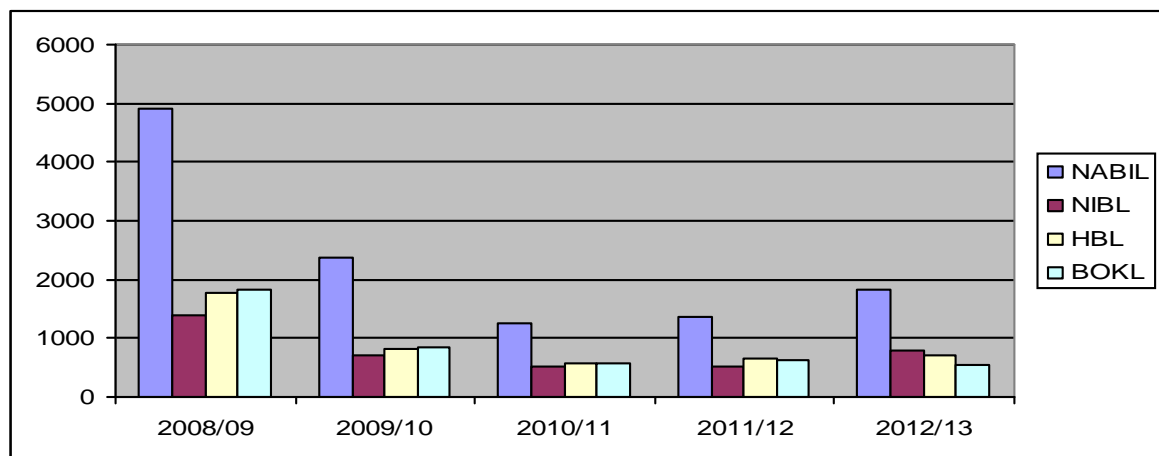
The above table 4.5 shows that MPS of the related banks from 2008/09 to 2012/13. In the year 2008/09, NABIL has 4899 MPS which is the highest

whereas NIBL has the lowest MPS i.e. 1388, HBL has 1760 MPS and BOKL has 1825. The pooled average is 2468.

In the year 2009/10, NABIL has 2384 MPS which is the highest where as NIBL the lowest MPS i.e. 705, HBL has 816 MPS and BOKL has 840.

In the year 2010/11, NABIL has 1252 MPS which the highest where sa NIBL has the lowest MPS i.e. 51.5. The MPS of HBL and BOKL have 575 and 570 respectively.

In the year 2011/12, the MPS of NABIL, NIBL, HBL and BOKL is 1355, 511, 653 and 628 respectively where NABIL has the highest MPS among these four banks and NIBL has the lowest MPS.

In the year 2012/13, NABIL has the highest MPS than NIBL, HBL and BOKL. NABIL has 1815, NIBL has 700 and BOKL has 553. The pooled average is 963.

Finally, the S.D. of NABIL, NIBL, HBL and BOKL have 1340.15, 321.74, 436.64 and 481.89 and C.V of NABIL, NIBL, HBL and BOKL have 57.25, 41.22%, 48.51% and 54.56%. The C.V analysis shows that NIBL is less risky ratio so, it has better condition.

4.1.6 Dividend Yield Analysis

The table shows dividend yield analysis of NABIL, NIBL, HBL and BOKL. It is calculated by dividing DPS by MPS.

Table 4.6

Analysis of Dividend Yield

Year	NABIL	NIBL	HBL	BOK	Pooled
2008/09	0.71	1.44	0.68	0.40	0.81
2009/10	1.26	3.55	1.45	1.79	2.01
2010/11	2.40	4.85	2.93	2.94	3.28
2011/12	2.95	0.98	2.06	3.39	2.35
2012/13	2.20	3.19	1.43	0.13	1.74
Mean	1.90	2.80	1.71	1.73	2.04
S.D	0.81	1.42	0.75	1.31	0.81
C.V%	42.63	50.68	43.92	75.60	39.47

Source: Appendix 1(F)

Figure 4.6

Bar Diagram Showing Dividend Yield
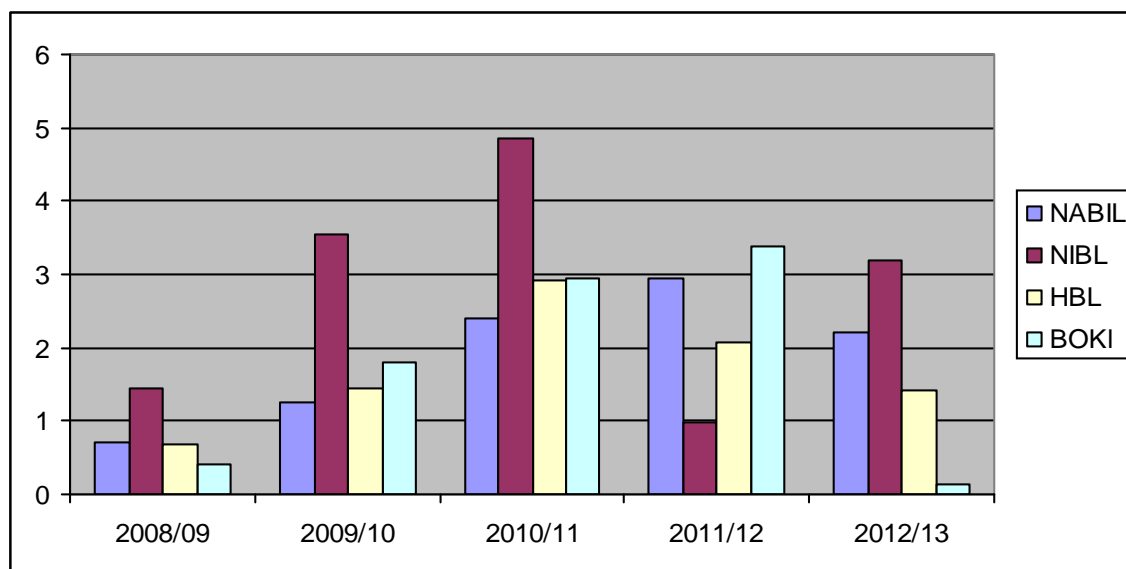
The above table shows the dividend yield of NABIL, NIBL, HBL and BOKL.

In the year 2008/09, the dividend yield of NABIL, NIBL, HBL and BOKL is 0.71, 1.44, 0.68 and 0.40 respectively where NIBL has the highest dividend yield among these four banks. The pooled average is 0.81 and NIBL has better condition than other four banks.

In the year 2009/10, the dividend yield of NABIL, NIBL, HBL and BOKL is 1.26, 3.55, 1.45 and 1.79 respectively. All four banks, dividend yield has increased than the year 2008/09. NIBL has the highest dividend yield.

In the year 2010/11, NABIL has 2.40, NIBL has 4.85, HBL has 2.93 and BOKL has 2.94. Among these four banks, NIBL has highest dividend yield.

In the year 2011/12, BOKL has the highest dividend yield than NABIL, NIBL and HBL. NABIL has 2.95, NIBL has 0.98, HBL has 2.06 and BOKL has 3.39. The pooled average is 2.35. BOKL has better condition.

In the year 2011/12, the dividend yield of NABIL, NIBL, HBL and BOKL is 2.20, 3.19, 1.43 and 1.13 respectively. Among these four banks, dividend yield of NIBL is in better condition.

Finally, the S.D. of NABIL, NIBL, HBL and BOKL have 0.81, 1.42, 0.75 and 1.31 and C.V. of NABIL is 42.63%, NIBL is 50.68%, HBL is 43.92% and BOKL is 75.60%. In overall NABIL banks is lower C.V and S.D. than other banks i.e. NIBL, HBL and BOKL. So, NABIL is better than other banks.

4.2   Correlation Analysis

Correlation analysis helps to determine the strength of the linear relationship between two variables. In other words, as to how strongly are those two variables correlated. It helps to determine whether a positive or negative relationship exists between two variables and the relationship is significant or not.

4.2.1   Correlation between EPS and DPS.

Table 4.7

Correlation between EPS and DPS

Banks	r	Relationship	r^2	Probable Error	Remarks
NABIL	0.3721	Positive	0.1385	0.2595	Significant
NIBL	0.8433	Positive	0.7111	0.0871	Significant
HBL	0.2059	Positive	0.0424	0.3729	Insignificant
BOKL	-0.0993	Negative	0.0099	0.2987	Insignificant

Sources: Appendix 2 (A)

Where,

ε $X\varepsilon$ $Z\overline{\varepsilon}$

ψ $X\psi$ $Z\overline{\psi}$

Again probable error of correlation of coefficient P.E. (r) =

$0.6745x\dfrac{1-r^2}{\sqrt{n}}$

If r is greater than 6 P.E. it is significant.

If r is less than 6 P.E. , it is insignificant.

Above table 4.7 shows that the relationship between EPS and DPS of the four sample banks. It is observed that the correlation of NABIL, NIBL and HBL is positive. It can be said that EPS and DPS of these banks are strongly correlated with each other. But one case of BOKL here is negative correlating

which indicates that EPS and DPS are negotiable & correlated each other. The relationship between EPS and DPS whether they are significant or not can be measured by calculating the probable error of the correlated coefficient. In case of NABIL and NIBL are greater than 6P.E. For NABIL and NIBL, EPS is the key factor to determine DPS due to significant relationship between EPS and DPS.

The coefficient of determination is mere precise measures of the relationship between two variables and it can be presented as a proportion. The coefficient of determination between EPS and DPS of NABIL is 0.1385 which means that the change in EPS has a significant effect on the variation of DPS. In case of NIBL, HBL and BOKL, it is 0.0871, 0.3729 and 0.2987 respectively.

4.2.2 Correlation between EPS and MPS

Table 4.8

Correlation between EPS and MPS

Banks	R	Relationship	r^2	Probable	Remarks
NABIL	0.8805	Positive	0.7753	0.0678	Significant
NIBL	0.0796	Positive	0.0063	0.2995	Insignificant
HBL	0.8218	Positive	0.6754	0.0979	Significant
BOK	0.9035	Positive	0.8163	0.0554	Significant

Sources: Appendix 2 (B)

Above table shows that the relationship between EPS and MPS of four sample banks. It is observed that the correlation coefficient of all banks in positive. So it is concluded that there is positive relationship between EPS and MPS of NABIL, NIBL, HBL and BOKL and since correlation coefficient of NABIL, HBL and BOKL are higher than 6 P.E. There is significant relationship between EPS and MPS. It means that the market price of the stock of the banks is affected by dividends.

4.3 Regression Analysis

Regression analysis is a very powerful tools in the field of statistical analysis is predicting the value of one variable, given the value of another variable, when these two variable due to change in independent variable. The

regression analysis either be simple regression or multiple. In simple regression analysis only one independent variable has taken for the prediction of the value of dependent variable. But multiple regression analysis involves two or more independent variable forming the basis of estimating the values of dependent variables. In this research, simple regression analysis is used to establish relationship between the dependent variable and single dependent variable on individual sample company where the multiple regression analysis is used to show the combined relationship of dependent variable to other independent variable of all companies.

4.3.1 Simple Regression Analysis between DPS and EPS

When we take only one independent variable predict the value of the dependent variable through the appropriate regression line the analysis is known as simple regression analysis.

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

Table 4.9

Regression Analysis between DPS and EPS

Banks	No of years	Constant (a)	Regression Coefficient(b)	S.E.E	Sb	T-value
NABIL	5	24.6547	0.1159	5.3453	0.1665	0.6960
NIBL	5	-11.4683	0.7758	5.3802	0.2858	2.7145
HBL	5	10.95	0.0440	2.8876	0.1208	0.3642
BOK	5	17.1527	-0.1133	9.3717	0.6560	-0.1730

Source: Appendix 2 (A)

The table 4.9 helps us to found out the mathematical equation that relates to dependent variables (DPS) with the independent variable (EPS). The simple regression equation DPS and EPS calculated in the Appendix 2(A) is:

$$Y = a + bx$$

Let the dependent variable DPS is denoted by y and independent variable EPS is denoted by x, then the equation is:

DPS   = a+bx

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Now,

$DPS_{NABIL} = 24.6547 + 0.1159 EPS_{NABIL}$

$DPS_{NIBL} = 11.4683 + 0.7758 EPS_{NIBL}$

$DPS\ HBL = 10.95 + 0.0440 EPS_{HBL}$

$DPS_{BOKL} = 17.1527 - 0.1133 EPS_{BOKL}$

From the above table, the beta (regression coefficient) of BOK is 0.1159, which indicates that one rupee increase independent variable (EPS) leads to an average Rs 0.1159 increase independent variable (DPS), if the constant (a) remains same at 24.6547. Since the calculated t-value of NABIL (0.6960) is less than the tabulated t-value (2.776) at 5% level of significance and 4 degree of freedom, so the result is statically no significant.

In the case of NIBL, the beta (regression coefficient) of NIBL is 0.7758, which indicates that one rupee increase in independent variable (EPS) leads to an average Rs 0.7758 increase independent variable (DPS), if the constant (a) remains same at -11.4683. Since calculated t-value of NIBL (2.7145) is less than the tabulated t-value (2.776) at 5% level of significance and 4 degree of freedom, so the result is statically no significant.

In the case of HBL, the beta (regression co-efficient) of HBL is 0.0440, which indicates that one rupee increase in independent variable (EPS) leads to an average Rs. 0.0440 increase in dependent variable (DPS), if the constant (a) remains same at 10.95. Since calculated t-value of HBL (0.3642) is less than the tabulated t-value (2.776) at 5% level of significance and 4 degree of freedom. So, the result is statically no significant.

In the case of BOKL, the beta (regression coefficient) of BOKL is -0.1133, which indicates that one rupee increase in independent variable (EPS) leads to an average Rs 0.1133 decrease in dependent variable (DPS), if the constant (a) 17.1527 remains same. Since, the calculated t-value of BOKL (-0.1730) is less than the tabulated t-value (2.776) at 5% level of significance and 4 degree of freedom. So, the result is statistically no significant.

4.3.2 Simple Regression Analysis between MPS and EPS

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

Table 4.10

Regression Analysis between MPS and EPS

Banks	No of years	Constant (a)	Regression Coefficient(b)	S.E.E	Sb	T-value
NABIL	5	-49994.0476	82.1762	820.6396	25.5591	3.2151
NIBL	5	657.1390	3.0439	414.1685	21.9989	0.1384
HBL	5	-526.095	33.5740	321.3531	13.4467	2.4969
BOK	5	-2067.1748	68.0437	266.9723	18.6584	3.6468

Source: Appendix 2 (B)

The table 4.10 helps us to find out the mathematical equation that relates to dependent variable (MPS) with the independent variable (EPS). The simple regression equation between MPS and EPS calculated in the Appendix 2 (B) is : 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+bx

Now,

MPS_{NABIL} = -4994.0476+82.176 EPS_{NABIL}

MPS_{NIBL} = 657.1390+3.0439EPS_{NIBL}

MPS_{HBL} = -526.095+33.5740EPS_{HBL}

MPS_{BOKL} = -2067.1748+68.0437EPS_{BOKL}

From the above table, the beta (regression coefficient) of NABIL is 82.1762, which indicates that one rupee increase in independent variable (EPS) leads to an average Rs 82.1762 increase in dependent variable (MPS). If the constant(a) remains same at -4994.0476. Since, calculated t-value of NABIL (3.2151 is greater than the tabulated t-value (2.776) at 5% of significance and 4 degree of freedom, So the result is statically significant.

Likewise, in the case of NIBL, the beta (regression coefficient) of NIBL is 3.0439, which indicates that one rupee increase in independent variable (EPS) leads to an average Rs 3.0439 increase in dependent variable (MPS). If the constant (a) remains same at 657.1390. Since, calculated t-value of NIBL (0.1384) is less than the tabulated t-value (2.776) at 5% of significance and 4 degree of freedom, so the result is statically no significant.

In the case of HBL, the beta (regression coefficient) of HBL is 33.5740, which indicates that one rupee increase in independent variable (EPS) leads to an average Rs 33.5740 increase in independent variable (MPS). If the constant (a) remains same at -526.095. Since calculated t-value of HBL (2.4969) is less than the tabulated t-value (2.776) at 5% level of significance and 4 degree of freedom, so the result is statically no significant.

In the case of BOKL, the beta (regression coefficient) of BOKL is 68.0437 which indicate that one rupee increase in independent variable (EPS) lead to an average Rs 68.0437 increase in dependent variable (MPS). If the constant (a) remains same at -2067.1748. Since calculated t-value of BOKL (3.6468) is greater than the tabulated t-value (2.776) at 5% level of significance and 4 degree of freedom, so the result is statically significant.

4.4   Major findings

The main findings of the research work obtained from the secondary data analysis are stated as follows:

⎦ The average earning per share of sample banks do not seem satisfactory except NABIL. It has highest EPS in all consecutive years, HBL has higher C.V. than all other sample banks which indicates HBL has higher risk and gives higher return. In the year 2008/09, NABIL has highest EPS 113.44.

⎦ The average dividend per share of banks does not seem satisfactory except NABIL. NABIL paid higher rate of dividend to its shareholder which seems quite satisfactory but in case of HBL, NIBL and BOKL dividend paid to shareholders is quite low. Higher dividend per share

creates positive attitude of the shareholder towards the company which consequently helps to increase the market value of shares.

⌡ The dividend payout ratio of NIBL is higher and BOKL has lowest among all, which indicates that NIBL is following aggressive dividend policy and it has the ability to pay dividend. The C.V. of DPR of NABIL indicates that the NABIL D/P ratio to common shareholders is much better than other sample banks.

⌡ The P/E ratio of NABIL, NIBL, HBL and BOKL is almost close to each other. NIBL has higher C.V. than other sample banks. It indicates that is in risk and NIBL is high.

⌡ The analysis of MPS shows that of all four bank are in decreasing trend. It also indicates that average MPS of NABIL is higher than NIBL, HBL and BOKL and MPS of NIBL is lowest. NABIL has the highest C.V. and NIBL has the lowest C.V among the other sample banks.

⌡ NIBL earning yield is higher than other three sample banks and it earn more. Who earns more, gives more satisfaction to the shareholders and investors believes more to NIBL Bank.

⌡ The correlation between EPS and DPS are positive for NABIL, NIBL and HBL have the significant relationship at 5% level of significance where as BOKL has negative correlation between EPS and DPS.

⌡ The correlation between EPS and MPS are positive of all four banks and has the significant relationship at 5% level of significance. It means that EPS and MPS of these four banks are strongly correlated with each other.

⌡ The regression analysis between EPS and DPS, the regression coefficient (b) is positive for NABIL, NIBL and HBL and negative for BOKL.

⌡ The calculated t-value of NABIL, NIBL, HBL and BOKL have 0.6960, 2.7145, 0.3642 and -0.1730 respectively which tabulated value is 2.776. It means all four sample banks are statically no significant.

⨐ The regression analysis between EPS and MPS, the regression coefficient (b) is positive for NABIL, NIBL, HBL and BOKL respectively.

⨐ The calculated t-value between MPS and EPS of NABIL, NIBL, HBL and BOKL have 3.2151, 0.1384, 2.4969, 3.6468 respectively which tabulated t-value is 2.776. It means NABIL and BOKL are statically significant and NIBL and HBL are statistically no significant.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter focuses on summarizing the study held with research analysis. Also, this chapter includes conclusion of the study based on major findings. The next attempts in this chapter will be made for the recommendation on the basis of findings and conclusion. For this purpose, the chapter is sub dividend into summary and conclusion of the research, which will be followed by some recommendations.

5.1 Summary

Dividend is very important factor for investors. It plays vital role to show the performance of the banks for effective goal achievement to satisfy the shareholder and to attract the new investors.

Dividend refers to the distributed earnings to the shareholders of the company in return to their investment. Dividend decision is a major financial management decision because the firm has to choose between distributing the profit to the shareholders and reinvesting it to finance the business.

This study is mainly based on to access the dividend practices of different banks. It covers some specific objectives mainly to find out the appropriate dividend policies of different banks.

After the economic liberalization in Nepal 1984, the Government makes an open market policy in the county and established commercial bank, joint venture banks, financial institution and insurance companies and expands their activities and attract to shareholder to invest.

From the shareholder point of view, shareholder have always high expectation than market price so company invested by foreigner are paying dividend that is more attractive dividend than the companies promoted by Nepalese promoters. Because higher net worth do not give benefit to the foreigner rather than market price of the share they invest their capital for high return most of things about dividend policy defines in first chapter describes

national international studies. In research methodology and second chapter defines presentation and analysis of data.

This study is mainly based on the secondary data of four sample banks. The study covers a period of five years from 2008/09 to 2012/13. To make the research reliable, many more analysis are conducted to find out the appropriate relationship between dividend and other variables, which affect the dividend. The consistency of dividend distribution of different companies is also analyzed by using statistically tools. The relationship also statically tested at 5% level of significant.

5.2   Conclusions

From the above analysis of various financial indicator and statistical tools of the all the sample banks, following conclusions are drawn:

) Above mentioned major findings lead this study concludes that the earning of banks said to be satisfactory in Nepalese context. Among sample banks NABIL is leading position in terms of earning followed by NIBL, HBL and BOK respectively.

) It is found from the study that there is no consistency found in dividend distribution in all sample banks. The research shows that none of these banks have well defined and appropriate policy regarding dividend payment. NABIL is paying higher dividend than other sample banks.

) It is also found that there is positive and significant relationship between market price per share an earning price per share for all sample banks. It means that there is positive effect of earning to the market price of stock in Nepalese commercial banks.

) From the analysis, it is found that the market price of stock is affected by other variables which indicate about the rational behavior of investors.

) The major findings have also led to conclude that the companies are neglecting the major factors like earning position of the firm, liquidity position while paying dividend.

∫ The study deals with only examining and analyzing the dividend practices of four sample banks for a period covering 5 years from 2008/09 to 2012/13 due to limited time period. If a large sample is taken for the whole population the result might be very and be more absolute. So, dividend policy may be subject of further study which can be more appropriate.

5.3 Recommendations & Suggestions

This study has come to an end with the following recommendations.

➢ Commercial banks should formulate their dividend policy according to Nepalese context. The bank should give more priority to the shareholder's interest.

➢ The policy and practices of dividend payment procedure adopted by the commercial banks are not stable because in some cases, small amount of dividend is distributed without considering future. Dividend is not paid in upward trend. It is in fluctuation. So, banks should study about it.

➢ Most of the sample banks have great fluctuation in terms of coefficient of variation (C.V.), EPS, DPS, DY and MPS such fluctuation increase the risk factor among the investors. Therefore, the banks should take necessary steps towards bringing consistency in these factors.

➢ Formulation of dividend policy will clearly guide the way of how to follow divided distribution strategy as the policy will determine it. Hence, the policy makers need to be farsighted and make appropriate policy in terms of dividend distribution. Like wise, the bank should follow a systematic way of the distribution of dividend.

➢ The value of constant 'a' is relatively high in the study of each financial tool. It means there are many factors which affect EPS, DPS, MPS, DPR etc. Besides them, there are many other non-financial factors like public awareness, high liquidity, expectations of bonus share, good government policy and political instability as well. It is recommended for necessary consideration.

➢ The legal rule for the treatment of dividend is must for the smooth growth of any enterprises as well as growth of national economy. Some of the companies are in position to pay dividend while considered some case. But some companies are suffering loss and there are efforts to minimize rather than payment of dividend. Therefore, the government should act on factor of investors and behind these companies by distinct rules.

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EPS

For NABIL

$$\sigma = \sqrt{\frac{(113.44-89.26)^2 + (83.81-89.26)^2 + (70.67-89.26)^2 + (83.23-89.26)^2 + (95.14-89.26)^2}{5}}$$

$$= \sqrt{\frac{584.67 + 29.70 + 345.59 + 36.36 + 34.57}{5}}$$

$$= \sqrt{206.178}$$

$$= 14.36$$

$$\text{C.V.} = \frac{14.36}{89.26} x100$$
$$= 16.09\%.$$

For NIBL,

$$\sigma = \sqrt{\frac{(37.4-40.56)^2 + (52.5-40.56)^2 + (39.1-40.56)^2 + (27.6-40.56)^2 + (46.2-40.56)^2}{5}}$$

$$= \sqrt{\frac{9.99 + 142.56 + 2.13 + 167.96 + 31.81}{5}}$$

$$= \sqrt{70.89}$$

$$= 8.42$$

$$\text{C.V.} = \frac{8.42}{40.56} x100\%$$

$$= 20.76\%$$

For HBL,

$$\sigma = \sqrt{\dfrac{(61.90-42.50)^2 + (31.80-42.50)^2 + (44.66-42.50)^2 + (39.94-42.50)^2 + (34.19-42.50)^2}{5}}$$

$$= \sqrt{\dfrac{376.36 + 114.49 + 4.67 + 6.55 + 69.06}{5}}$$

$$= \sqrt{114.23}$$

$$= 10.69$$

$$\text{C.V.} = \dfrac{10.69}{42.50} \times 100\%$$

$$= 25.15\%$$

For BOKL,

$$\sigma = \sqrt{\dfrac{(54.68-43.36)^2 + (43.08-43.36)^2 + (44.51-43.36)^2 + (37.88-43.36)^2 + (36.64-43.36)^2}{5}}$$

$$= \sqrt{\dfrac{128.14 + 0.0784 + 1.32 + 30.03 + 45.16}{5}}$$

$$= \sqrt{40.95}$$

$$= 6.40$$

$$\text{C.V.} = \dfrac{6.40}{43.36} \times 100\%$$

$$= 14.76\%$$

For Pooled Average

$$\sigma = \sqrt{\frac{(66.86 - 53.92)^2 + (52.80 - 53.92)^2 + (49.74 - 53.92)^2 + (47.16 - 53.92)^2}{5}}$$

$$= \sqrt{\frac{167.44 + 1.25 + 17.47 + 45.70 + 0.77}{5}}$$

$$= \sqrt{46.53}$$

$$= 6.82$$

$$C.V = \frac{6.82}{53.92} \, x100\%$$

$$= 12.65\%$$

APPENDIX 1 (B)

For NABIL

$$\sigma = \sqrt{\frac{(35 - 35)^2 + (30 - 35)^2 + (30 - 35)^2 + (40 - 35)^2 + (40 - 35)^2}{5}}$$

$$= \sqrt{\frac{0 + 25 + 25 + 25 + 25}{5}}$$

$$= \sqrt{20}$$

$$= 4.47$$

$$\text{C.V.} = \frac{4.47}{35} x 100\%$$

$$= 12.77\%$$

For NIBL,

$$\sigma =$$

$$\sqrt{\frac{(12 - 12.82)^2 + (11.84 - 12.82)^2 + (16.84 - 12.82)^2 + (13.42 - 12.82)^2 + (10 - 12.82)^2}{5}}$$

$$= \sqrt{\frac{0.67 + 0.96 + 16.16 + 0.36 + 7.95}{5}}$$

$$= \sqrt{19.74}$$

$$= 4.44$$

$$\text{C.V.} = \frac{4.44}{12.82} x 100$$

$$= 34.66\%$$

For BOKL,

$$\sigma =$$

$$\sqrt{\frac{(7.37 - 12.24)^2 + (15 - 12.24)^2 + (16.75 - 12.24)^2 + (21.32 - 12.24)^2 + (0.74 - 12.24)^2}{5}}$$

$$= \sqrt{\frac{23.72 + 7.62 + 20.34 + 82.45 + 132.25}{5}}$$

$$= \sqrt{53.28}$$

$$= 7.30$$

$$\text{C.V.} = \frac{7.30}{12.24} x 100$$

$$= 59.64\%$$

For Pooled Average

$$\sigma =$$

$$\sqrt{\frac{(18.59 - 20.02)^2 + (20.46 - 20.02)^2 + (22.15 - 20.02)^2 + (19.69 - 20.02)^2 + (18 - 94 - 20.02)^2}{5}}$$

$$= \sqrt{\frac{2.04 + 0.19 + 4.54 + 0.11 + 1.17}{5}}$$

$$= \sqrt{1.61}$$
$$= 1.27$$

$$\text{C.V.} = \frac{1.27}{20.02} x 100\%$$

$$= 6.34\%$$

For NABIL,

$$\sigma = \sqrt{\frac{(30.85-39.84)^2 + (35.80-39.84)^2 + (42.45-39.84)^2 + (48.06-39.84)^2 + (42.04-39.84)^2}{5}}$$

$$\sigma = \sqrt{\frac{80.82 + 16.32 + 6.81 + 67.57 + 4.84}{5}}$$

$$= \sqrt{35.27}$$

$$= 5.94$$

$$\text{C.V.} = \frac{5.94}{39.84} \times 100\%$$

$$= 14.91\%$$

For NIBL,

$$\sigma = \sqrt{\frac{(53.48-47.45)^2 + (47.62-47.45)^2 + (63.94-47.45)^2 + (18.12-47.45)^2 + (54.11-47.45)^2}{5}}$$

$$= \sqrt{\frac{36.36 + 0.029 + 271.92 + 860.25 + 44.36}{5}}$$

$$= \sqrt{242.58}$$

$$= 15.58$$

$$\text{C.V.} = \frac{15.58}{47.45} \times 100\%$$

$$= 32.82\%$$

For HBL,

$$\sigma = \sqrt{\frac{19.39-31.44)^2 + (37.23-31.44)^2 + (37.71-31.44)^2 + (33.60-31.44)^2 + (29.25-31.44)^2}{5}}$$

$$= \sqrt{\frac{145.20 + 33.52 + 39.31 + 4.67 + 4.80}{5}}$$

$$= \sqrt{45.5}$$

$$= 6.75$$

$$\text{C.V.} = \frac{6.75}{31.44} \times 100\%$$

$$= 21.45\%$$

For BOKL,

$$\sigma = \sqrt{\frac{(13.48-28.85)^2 + (34.82-28.85)^2 + (37.63-28.85)^2 + (56.28-28.85)^2 + (2.02-28.85)^2}{5}}$$

$$= \sqrt{\frac{236.24 + 35.64 + 77.09 + 752.40 + 719.85}{5}}$$

$$= \sqrt{364.24}$$
$$= 19.09$$

$$\text{C.V.} \quad = \frac{19.09}{28.82} x100\%$$
$$` \quad = 66.15\%$$

For Pooled Average

$$\sigma = \sqrt{\frac{(29.3-36.90)^2 + (38.87-36.90)^2 + (45.43-36.90)^2 + (39.02-36.90)^2 + (31.86-36.90)^2}{5}}$$

$$= \sqrt{\frac{57.76 + 3.88 + 72.76 + 4.49 + 25.40}{5}}$$

$$= \sqrt{32.86}$$
$$= 5.73$$

$$\text{C.V.} \quad = \frac{5.73}{36.90} x100\%$$
$$= 15.53\%$$

For NABIL,

$$\sigma = \sqrt{\frac{(43.19-24.94)^2+(28.45-24.94)^2+(17.72-24.94)^2+(16.28-24.94)^2+(19.08-24.94)^2}{5}}$$

$$= \sqrt{\frac{333.06+12.32+52.13+74.99+34.34}{5}}$$

$$= \sqrt{101.37}$$

$$= 10.07$$

$$\text{C.V.} = \frac{10.07}{24.94} \times 100\%$$

$$= 40.37\%$$

For NIBL,

$$\sigma = \sqrt{\frac{(37.11-19.84)^2+(13.43-19.84)^2+(13.17-19.84)^2+(18.51-19.84)^2+(16.97-19.84)^2}{5}}$$

$$= \sqrt{\frac{298.25+41.09+44.49+1.78+8.24}{5}}$$

$$= \sqrt{78.77}$$

$$= 8.88$$

$$\text{C.V.} = \frac{8.88}{19.84} \, 100\%$$

$$\backslash = 44.73\%$$

For HBL,

$$\sigma = \sqrt{\frac{(28.43-20.76)^2+(25.66-20.76)^2+(12.88-20.76)^2+(16.35-20.76)^2+(20.47-20.76)^2}{5}}$$

$$= \sqrt{\frac{58.83+24.01+62.09+19.45+0.0841}{5}}$$

$$= \sqrt{32.89}$$

$$= 5.74$$

$$\text{C.V.} = \frac{5.74}{20.76} \times 100\%$$

$$= 27.65\%$$

For BOKL,

$$\dagger = \sqrt{\frac{(33.38 - 19.47)^2 + (19.50 - 19.47)^2 + (12.81 - 19.47)^2 + (16.58 - 19.47)^2 + (15.09 - 19.47)^2}{5}}$$

$$= \sqrt{\frac{193.49 + 0.0009 + 44.36 + 8.35 + 19.18}{5}}$$

$$= \sqrt{53.08}$$

$$= 7.29$$

$$\text{C.V.} = \frac{7.29}{19.47} \times 100\%$$

$$= 37.42\%$$

For Pooled Average

$$\dagger = \sqrt{\frac{35.53 - 21.25)^2 + (21.76 - 21.25)^2 + (14.15 - 21.25)^2 + (16.93 - 21.25)^2 + (17.90 - 21.25)^2}{5}}$$

$$= \sqrt{\frac{203.92 + 0.26 + 50.41 + 18.66 + 11.22}{5}}$$

$$= \sqrt{56.89}$$

$$= 7.54$$

$$\text{C.V.} = \frac{7.54}{21.25} \times 100\%$$

$$= 35.50\%$$

MPS

For NABIL,

$$\sigma = $$
$$\sqrt{\frac{(4899-2341)^2 + (2384-2341)^2 + (1252-2341)^2 + (1355-2341)^2 + (1815-2341)^2}{5}}$$

$$= \sqrt{\frac{6543364 + 1849 + 1185921 + 972196 + 276676}{5}}$$
$$= \sqrt{1796001.2}$$
$$= 1340.15$$

C.V. $= \dfrac{1340.15}{2341} x100\%$

$= 57.25\%$

For NIBL,

$$\sigma = $$
$$\sqrt{\frac{(1388-780.6)^2 + (705-780.6)^2 + (515-780)^2 + (511-780.6)^2 + (784-780.6)^2}{5}}$$
$$= \sqrt{\frac{368934.76 + 5715.36 + 70225 + 72684.16 + 11.56}{5}}$$
$$= \sqrt{103514.168}$$
$$= 321.74$$

C.V. $= \dfrac{321.74}{780.6} x100\%$

$= 41.22\%$

For HBL,

$$\sigma = $$
$$\sqrt{\frac{(1760-900.81)^2 + (816-900.8)^2 + (575-900.8)^2 + (653-900.8)^2 + (700-900.8)^2}{5}}$$
$$= \sqrt{\frac{738.22 + 4.64 + 7191.04 + 106145.64 + 61404.48 + 40320.64}{5}}$$
$$= \sqrt{190657.288}$$
$$= 436.64$$

C.V. $= \dfrac{436.44}{900.8} x100\%$
$= 48.51\%$

For BOKL,

$$\sigma = \sqrt{\frac{(1825-883.2)^2 + (840.883.2)^2 + (570-883.2)^2 + (628-883.2)^2 + (553-883.2)^2}{5}}$$

$$= \sqrt{\frac{886987.24 + 1866.24 + 98094.24 + 65127.04 + 109032.04}{5}}$$
$$= \sqrt{232221.36}$$
$$= 481.89$$

$$\text{C.V.} = \frac{481.89}{883.02} \times 100\%$$

$$= 54.56\%$$

For Pooled Average

$$\sigma = \sqrt{\frac{(2468-1226.4)^2 + (1186-1226.4)^2 + (728-1226.4)^2 + (786.75-1226.4)^2 + (963-1226.4)^2}{5}}$$
$$= \sqrt{410855.392}$$
$$= 640.98$$

$$\text{C.V.} = \frac{640.98}{1226.4} \times 100\%$$
$$= 52.67\%$$

For NABIL,

$$\dagger = \sqrt{\frac{(0.71\,Z\,1.90)^2\,\Gamma\,(1.26\,Z\,1.90)^2\,\Gamma\,(2.40\,Z\,1.90)^2\,\Gamma\,(2.95\,Z\,1.90)^2\,\Gamma\,(2.20\,Z\,1.90)^2}{5}}$$

$$= \sqrt{\frac{1.42\,\Gamma\,0.41\,\Gamma\,0.25\,\Gamma\,1.10\,\Gamma\,0.09}{5}}$$

$$= \sqrt{0.54}$$

$$= 0.81$$

$$\text{C.V.} = \frac{0.81}{1.90}\,x100\%$$

$$= 42.63\%$$

For NIBL,

$$\dagger = \sqrt{\frac{1.44\,Z\,2.80)^2\,\Gamma\,(3.55\,Z\,2.80)^2\,\Gamma\,(4.85\,Z\,2.80)^2\,\Gamma\,(0.98\,Z\,2.80)^2\,\Gamma\,(3.19\,Z\,2.80)^2}{5}}$$

$$= \sqrt{\frac{1.85\,\Gamma\,0.56\,\Gamma\,4.20\,\Gamma\,3.31\,\Gamma\,0.15}{5}}$$

$$= \sqrt{2.014}$$

$$= 1.42$$

$$\text{C.V.} = \frac{1.42}{2.80}\,x100\%$$

$$= 50.65\%$$

For HBL,

$$\dagger = \sqrt{\frac{(0.68\,Z\,1.71)^2\,\Gamma\,(1.45\,Z\,1.71)^2\,\Gamma\,(2.93\,Z\,1.71)^2\,\Gamma\,(2.06\,Z\,1.71)^2\,\Gamma\,(1.43\,Z\,1.71)^2}{5}}$$

$$= \sqrt{\frac{1.06\,\Gamma\,0.07\,\Gamma\,1.49\,\Gamma\,0.12\,\Gamma\,0.08}{5}}$$

$$= \sqrt{0.564}$$

$$= 0.75$$

$$\text{C.V.} = \frac{0.75}{1.71}\,x100\%$$

$$= 43.92\%$$

For BOKL,

$$\dagger = \sqrt{\frac{(0.40\,Z1.73)^2\,\Gamma\,(1.79\,Z1.73)^2\,\Gamma\,(2.94\,Z1.73)^2\,\Gamma\,(3.39\,Z1.73)^2\,\Gamma\,(0.13\,Z1.73)^2}{5}}$$

$$= \sqrt{\frac{1.77\,\Gamma\,0.0036\,\Gamma\,1.46\,\Gamma\,2.76\,\Gamma\,2.56}{5}}$$
$$= \sqrt{1.71}$$
$$= 1.31$$

C.V. $= \dfrac{1.31}{1.73}x100\%$
$\quad\ = 75.60\%$

For Pooled Average

$$\dagger = \sqrt{\frac{(0.81\,Z2.04)^2\,\Gamma\,(2.01\,Z2.04)^2\,\Gamma\,(3.28\,Z2.04)^2\,\Gamma\,(2.35\,Z2.04)^2\,\Gamma\,(1.74\,Z2.04)^2}{5}}$$

$$= \sqrt{\frac{1.51\,\Gamma\,0.0009\,\Gamma\,1.54\,\Gamma\,0.10\,\Gamma\,0.09}{5}}$$
$$= \sqrt{0.65}$$
$$= 0.81$$

C.V. $= \dfrac{0.81}{2.04}x100\%$

$\quad\ = 39.47\%$

APPENDIX 2 (A)

For NABIL,

EPS (X)	DPS (Y)	X^2	Y^2	XY	$\int_{\varepsilon}\ Z\overline{\varepsilon}\,\mathring{A}$
113.44	35	12868.63	1225	3970.4	584.67
83.81	30	7024.12	900	2514.3	29.70

70.67	30	4994.25	900	2120.1	345.59
83.23	40	6927.23	1600	3329.1	36.36
95.14	40	9051.62	1600	3805.6	34.57
$\phi\varepsilon$ =446.29	$\phi\psi$ =175	$\phi\varepsilon^2$ =40865.85	$\phi\psi^2$ =6225	$\phi\varepsilon\,\psi$ =15739.6	$\phi\varepsilon\ Z\bar{\varepsilon}\,\text{Å}$=1030.89

Regression of Y on X, Y = a+bx
Where,

$$\bar{\varepsilon} \quad = \frac{\phi\varepsilon}{N} = \frac{446.29}{5} = 89.26$$

$$\bar{\psi} \quad = \frac{\phi\psi}{N} = \frac{175}{5} = 35$$

Coefficient of correlation (r)

$$= \frac{N\phi\varepsilon\,\psi - \phi X.\phi\psi}{\sqrt{5x40865.85\ Z(446.29)^2}\sqrt{5x6225\ Z(175)^2}}$$

$$= \frac{78698\ Z78100.75}{\sqrt{204329.25\ Z199174.76}\sqrt{31125\ Z30625}}$$

$$= \frac{597.25}{\sqrt{515.49}\sqrt{500}}$$

$$= \frac{597.25}{71.79\ Z22.36}$$

$$= \frac{597.25}{1605.22}$$

$$= 0.3721$$

Coefficient of determination (r^2) = $(0.372)^2$

$$= 0.13885$$

Standard Error of correlation $\text{Æ}\,A= \dfrac{1\,Zr^2}{\sqrt{n}}$

$$= \frac{1\,Z0.1385}{\sqrt{5}}$$

$$= \frac{0.8615}{2.2361}$$

$$= 0.3853$$

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

$$= 0.6745 \times 0.3853$$

$$= 0.2598$$

b = regression coefficient

According to the principle of least square two normal equation for estimation numerical constant a and b given by:

$$\phi\psi = na + b\,\phi\varepsilon$$
$$\phi\varepsilon\,\psi = a\,\phi\varepsilon + b\,\phi\varepsilon^2$$

Solving two normal equations, we get

$$b = \frac{y\phi\varepsilon\,\psi\,Z\phi\varepsilon\ .\ \phi\psi}{y\phi\varepsilon^2\,Z\!f\!\phi\varepsilon\ \AA}$$

$$= \frac{5\,x\,15739.6\,Z\,446.29\,x\,175}{5\,x\,40865.85\,Z\,(446.29)^2}$$

$$= \frac{78698\,Z\,78100.75}{204329.25\,Z\,199174.76}$$

$$= \frac{597.25}{5154.49}$$

$$= 0.1159$$

a $= \overline{\psi}\,Zb\overline{\varepsilon}$

$$= 35 - 0.1159 \times 89.26$$

$$= 35 - 10.3452$$

$$= 24.6547$$

Y = a+bx or ,Y = 24.65+0.1159x

Hence, required simple equation as follows:

$$\text{S.E.E.} = \sqrt{\frac{\sum\psi^2 - a\sum\psi - b\sum\varepsilon\,\psi}{y - 2}}$$

$$= \sqrt{\frac{6225 - 24.6575 x 175 - 0.1159 x 15739.6}{5 - 2}}$$

$$= \sqrt{\frac{6225 - 4315.0525 - 1824 - 2196}{3}}$$

$$= \sqrt{\frac{85.7179}{3}}$$

$$= \sqrt{28.5726}$$

$$= 5.3453$$

$$(S_b) = \frac{\text{S.E.E}}{\sqrt{\sum(\varepsilon - \bar{\varepsilon})^2}} \qquad t = \frac{b}{S_b}$$

$$= \frac{5.3453}{\sqrt{1030.89}} \qquad = \frac{0.1159}{0.1665}$$

$$= \frac{5.3453}{32.1075} \qquad = 0.6960$$

$$= 0.1665$$

For NIBL,

EPS (X)	DPS (Y)	X^2	Y^2	XY	$(\varepsilon - \bar{\varepsilon})^2$
37.4	20	1398.76	400	748	9.99
52.5	25	2756.25	625	1312.5	142.56
39.1	25	1528.81	625	977.5	2.13
27.6	5	761.76	25	138	167.96
46.2	25	2134.44	625	1155	31.81
$\sum\varepsilon$ =202.8	$\sum\psi$ =100	$\sum\varepsilon^2$ =8580.02	$\sum\psi^2$ =2300	$\sum\varepsilon\,\psi$ =4331	$\sum(\varepsilon - \bar{\varepsilon})^2$=354.45

Regression of Y on X, Y = a+bx
Where,

$$\bar{\varepsilon} = \frac{\sum\varepsilon}{N} = \frac{202.8}{5} = 40.56$$

$$\overline{\psi} = \frac{\phi\psi}{N} = \frac{100}{5} = 20$$

Coefficient of correlation (r)

$$= \frac{N\phi\epsilon\,\psi - \phi X.\phi\psi}{\sqrt{y\phi\epsilon^{\,2}\,Z\!f\!\phi\epsilon\,\AA}\ \sqrt{y\phi\psi^{2}\,Z(\phi\psi)^{2}}}$$

$$= \frac{5\,x\,4331\ Z\,202.81\,x\,100}{\sqrt{5\,x\,8580.02\,Z(202.8)^{2}}\ \sqrt{5\,x\,2300\,Z(100)^{2}}}$$

$$= \frac{21655\,Z\,20280}{\sqrt{42900.1\,Z\,41127.84}\ \sqrt{11500\,Z\,10000}}$$

$$= \frac{1375}{\sqrt{1772.26}\ \sqrt{1500}}$$

$$= \frac{1375}{42.10\ x\,38.73}$$

$$= \frac{1373}{1630.533}$$

$$= 0.8433$$

Coefficient of Correlation $(r^2) = (0.8433)^2$
$$= 0.7111$$

Standard Error of Correlation $\textit{f}\,\AA = \dfrac{1\,Z\,r^{2}}{\sqrt{n}}$

$$= \frac{1\,Z\,0.7111}{\sqrt{5}}$$

$$= \frac{0.2889}{2.2361}$$

$$= 0.1292$$

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

$$= 0.6745 x 0.1292$$
$$= 0.0871$$

b = regression coefficient

According to the principle of least square two normal equation for estimation numerical constants a and b given by:

$\phi\psi = na + b\phi\epsilon$

$\phi\epsilon\,\psi = a\phi\epsilon + b\ \phi\epsilon^{\,2}$

Solving two normal equations, we get

$$b = \frac{y\phi\varepsilon\ \psi\ Z\phi\varepsilon\ .\phi\psi}{y\phi\varepsilon\ ^2\ Z\!f\!\phi\varepsilon\ \mathring{A}}$$

$$= \frac{5\,x\,4331\,Z\,202.8\,x\,100}{5\,x\,8580.02\ Z\,(202.8)^2}$$

$$= \frac{21655\ Z\,20280}{42900.1\ Z\,411227.84}$$

$$= \frac{1375}{1772.26}$$

$$= 0.7758$$

Hence, Y = a+bx

$$\text{S.E.E.} = \sqrt{\frac{\phi\psi^2\ Za\phi\psi\ Zb\phi\varepsilon\ \psi}{n\ Z\,2}}$$

$$= \sqrt{\frac{2300\ Z\,(Z\,11.4683)\,x\,100\ Z\,0.7758\,x\,4331}{5\ Z\,2}}$$

$$= \sqrt{\frac{2300\ \Gamma\,1146.83\ Z\,3359.9898}{3}}$$

$$= \sqrt{\frac{86.8402}{3}}$$

$$= \sqrt{28.9467}$$

$$= 5.3802$$

$$(S_b) = \frac{\text{S.E.E}}{\sqrt{\phi\!\int\!\varepsilon\ -\overline{X}\mathring{A}}}$$

$$= \frac{5.3802}{\sqrt{354.45}}$$

$$= \frac{5.3802}{18.8268}$$

$$= 0.2858$$

t $\quad = \dfrac{b}{S_b}$

$$= \frac{0.7758}{0.2858}$$

$$= 2.7145$$

For HBL

EPS (X)	DPS (Y)	X²	Y²	XY	$\int_{\varepsilon} Z\bar{\varepsilon} \AA$
61.90	12	3831.61	144	742.8	376.36
31.80	11.84	1011.24	140.19	376.51	114.49
44.66	13.42	1994.52	283.59	752.07	4.67
39.94	10	1595.20	180.10	535.99	6.55
34.19		1168.96	100	341.9	69.06
$\phi\varepsilon$ =212.49	$\phi\psi$ =64.1	$\phi\varepsilon^2$ =9601.53	$\phi\psi^2$ =847.88	$\phi\varepsilon\psi$ =2749.27	$\phi\int_{\varepsilon} Z\bar{\varepsilon}\AA$=571.13

Regression of Y on X, Y = a+bx
Where,

$\bar{\varepsilon} \quad = \dfrac{\phi\varepsilon}{N} = \dfrac{212.49}{5} = 42.50$

$\bar{\psi} \quad = \dfrac{\phi\psi}{N} = \dfrac{64.1}{5} = 12.82$

Coefficient of correlation $\int \AA = \dfrac{N\phi\varepsilon\psi - \phi X.\phi\psi}{\sqrt{y\phi\varepsilon^2 Z\int\phi\varepsilon\AA}\ \sqrt{y\phi\psi^2 Z(\phi\psi)^2}}$

$$= \frac{5x\,2749.27\,Z\,212.49\,x\,64.1}{\sqrt{5x\,9601.53\,Z(212.49)^2}\ \sqrt{5x\,847.88\,Z(64.1)^2}}$$

$$= \frac{13746.35 \text{ Z} 13620.61}{\sqrt{48007.65 \text{ Z} 45152.0001} \ \sqrt{4239 \text{ Z} 4108.81}}$$

$$= \frac{125.74}{\sqrt{2855.65} \ \sqrt{130.59}}$$

$$= \frac{125.74}{53.4383 \ x 11.4276}$$

$$= 0.2059$$

Coefficient of determination $(r^2) = (0.2059)^2$

$$= 0.0424$$

Standard error of correlation $\oint \mathcal{A} = \frac{1 \text{ Z} r^2}{\sqrt{n}}$

$$= \frac{1 \text{ Z} 0.0424}{\sqrt{3}}$$

$$= \frac{0.9576}{1.7320}$$

$$= 0.5529$$

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

$= 0.6745 \text{ x } 0.5529$

$= 0.3729$

b = regression coefficient
According to the principle of least square two equation for estimation numerical constant a and b given by:

$\phi \psi = na + b \phi \varepsilon$
$\phi \varepsilon \, \psi = a \phi \varepsilon + b \ \phi \varepsilon^2$

Solving two normal equations, we get

$$b = \frac{y \phi \varepsilon \ \psi \ \text{Z} \phi \varepsilon \ . \phi \psi}{y \phi \varepsilon^2 \ \text{Z} \hat{f} \phi \varepsilon \ \mathring{A}}$$

$$= \frac{5 \, x 2749.27 \ \text{Z} 212.49 \ x 64.1}{5 \, x 9601.53 \, \text{Z} (212.49)^2}$$

$$= \frac{13746.35 \ \mathtext{Z}13620.61}{48007.65 \ \mathtext{Z}45152.0001}$$

$$= 0.04440$$

$$\therefore a = \overline{\psi} \ \mathrm{Z}b\overline{X}$$

$$= 12.82 - 0.0440 \times 42.50$$

$$= 12.82 - 1.87$$

$$= 10.95$$

Hence,

$$Y = a + bx$$
$$= 10.95 + 0.0440X$$

$$\text{S.E.E.} = \sqrt{\frac{\phi\psi^2 \ \mathrm{Z}a\phi\psi \ \mathrm{Z}b\phi\varepsilon \ \psi}{n \ \mathrm{Z}2}}$$

$$= \sqrt{\frac{847.88 \ \mathrm{Z}10.95 \, x \, 64.1\mathrm{Z}0.0440 \, x \, 2749.27}{5 \ \mathrm{Z}2}}$$

$$= \sqrt{\frac{847.88 \ \mathrm{Z}701.895 \ \mathrm{Z}120.97}{3}}$$

$$= \sqrt{\frac{25.015}{3}}$$

$$= 2.8876$$

$$S_b = \frac{S.E.E}{\sqrt{\phi f \varepsilon \ \mathrm{Z}\overline{\varepsilon} \ \mathring{A}}}$$

$$= \frac{2.8876}{\sqrt{571.13}}$$

$$= 0.1208$$

$$t = \frac{0.0440}{0.1208}$$

$$= 0.3642$$

For BOKL,

EPS (X)	DPS (Y)	X^2	Y^2	XY	$(X-\bar{X})^2$
54.68	7.37	2989.90	54.32	402.99	128.14
43.08	15	1855.89	225	646.2	0.0784
44.51	16.75	1981.14	280.56	745.54	1.3225
37.88	21.32	1434.89	454.54	807.60	30.0304
36.64	0.74	1342.49	0.5476	27.11	45.16
$\sum X = 216.79$	$\sum Y = 61.18$	$\sum X^2 = 9604.31$	$\sum Y^2 = 1014.97$	$\sum XY = 2629.45$	$\sum(X-\bar{X})^2 = 204.73$

Regression of Y on X, Y = a+bx
Where,

$$\bar{X} \quad = \frac{\sum X}{N} = \frac{216.79}{5} = 43.36$$

$$\bar{Y} \quad = \frac{\sum Y}{N} = \frac{61.18}{5} = 12.24$$

Coefficient of correlation $(r) = \dfrac{N\sum XY - \sum X.\sum Y}{\sqrt{y\sum X^2 - (\sum X)^2}\ \sqrt{y\sum Y^2 - (\sum Y)^2}}$

$$= \frac{5 \, x \, 2629.45 - 216.79 \, x \, 61.18}{\sqrt{5 \, x \, 9604.31 - (216.79)^2}\ \sqrt{5 x 1014.97 - (61.18)^2}}$$

$$= \frac{13147.25 - 13263.21}{\sqrt{48021.55 - 46997.90}\ \sqrt{5074.85 - 3742.99}}$$

$$= \frac{-115.96}{\sqrt{1023.65}\ \sqrt{1331.86}}$$

$$= \frac{-115.96}{1167.46}$$

$= -0.0993$

Coefficient of determination $(r^2) = (-0.0993)^2$

$$= 0.00986$$

Standard error of correlation $\text{f} \text{ } \text{Æ} = \dfrac{1\,Z\,r^2}{\sqrt{n}}$

$$= \dfrac{1\,Z\,0.00986}{\sqrt{5}} = 0.4428$$

P.E $\quad = 0.6745 \; x \dfrac{1\,Z\,r^2}{\sqrt{n}}$

$\quad\quad = 0.6745 \text{ x } 0.4428$

$\quad\quad = 0.2987$

b = regression coefficient

According to the principle of least square two equation for estimation numerical constant a and b given by:

$\phi\psi = na + b\,\phi\varepsilon$

$\phi\varepsilon\,\psi = a\,\phi\varepsilon + b\,\phi\varepsilon^{\,2}$

Solving two normal equations, we get

$$b = \dfrac{y\,\phi\varepsilon\,\psi\,Z\,\phi\varepsilon \; . \; \phi\psi}{y\,\phi\varepsilon^{\,2}\,Z\,\text{f}\phi\varepsilon\,\text{Å}}$$

$$\dfrac{5\,x\,2629.45\,Z\,216.79\,x\,61.18}{5\,x\,9604.31\,Z\,(216.79)^2}$$

$$= \dfrac{13147.25\,Z\,13263.21}{48021.55\,Z\,46997.90}$$

$$= \dfrac{Z\,115.96}{1023.65}$$

$= 0.1133$

$\ldots$ a $\quad = \overline{\psi}\,Z\,b\overline{\varepsilon}$

$\quad\quad = 12.24 - (-0.1133) \text{ x } 43.36$

$\quad\quad = 12.24 + 0.1133 \text{ x } 43.36$

$\quad\quad = 17.1527$

Hence, required simple equation as follows:

$$Y = a + bx$$
$$= 28.1527 + (-0.1133)\,X$$
$$= 28.1527 - 0.1133X$$

$$\text{S.E.E.} = \sqrt{\frac{\phi\psi^2\ Za\phi\psi\ Zb\phi\varepsilon\ \psi}{n\,Z2}}$$

$$= \sqrt{\frac{1014.97\ Z17.1527\,x61.18\,Z(Z0.1133)\,x\,2629.45}{5\,Z2}}$$

$$= \sqrt{\frac{1014.97\ Z1049.4022\ \Gamma\,297.9167}{3}}$$

$$= \sqrt{87.8282}$$

$$= 9.3717$$

$$(S_b) = \frac{\text{S.E.E}}{\sqrt{\phi f\varepsilon\ -\bar{\varepsilon}\ \text{\AA}}}$$

$$= \frac{9.3717}{\sqrt{204.73}}$$

$$= 0.6550$$

$$t = \frac{b}{S_b}$$

$$= \frac{Z0.1133}{0.6550}$$

$$= -0.1730$$

For NABIL,

EPS (X)	MPS (Y)	X^2	Y^2	XY	$\int \varepsilon \ Z \bar{\varepsilon} \ \AA$
113.44	4899	12868.63	24000201	555742.56	584.67
83.81	2384	7024.12	5683456	199803.04	29.70
70.67	1252	4994.25	1567504	88478.84	345.59
83.23	1355	6927.23	1836025	112776.65	36.36
95.14	1815	9051.62	3294225	172679.1	34.57
$\phi\varepsilon$ =446.29	$\phi\psi$ =11705	$\phi\varepsilon^2$ =40865.85	$\phi\psi^2$ =36381.411	$\phi\varepsilon\ \psi$ =1129480.19	$\phi\int\varepsilon \ Z\bar{\varepsilon} \ \AA$=1030.89

Regression of Y on X, Y = a+bx
Where,

$$\bar{\varepsilon} \quad = \frac{\phi\varepsilon}{N} = \frac{446.29}{5} = 89.26$$

$$\bar{\psi} \quad = \frac{\phi\psi}{N} = \frac{11705}{5} = 2341$$

Coefficient of correlation $\int\varepsilon \ \AA = \dfrac{N\phi\varepsilon\ \psi \ - \phi X.\phi\psi}{\sqrt{y\phi\varepsilon^2 \ Z\int\phi\varepsilon \ \AA} \ \sqrt{y\phi\psi^2 \ Z(\phi\psi)^2}}$

$$= \frac{5\,x\,1129480.19\ Z\,446.29\,x\,11705}{\sqrt{5\,x\,40865.85\ Z(446.29)^2}\ \sqrt{5\,x\,36381411\ Z(11705)^2}}$$

$$= \frac{564700.95\ Z\,5223821.45}{\sqrt{204329.25\ Z\,199174.76}\ \sqrt{181907055\ Z\,137007025}}$$

$$= \frac{423576.5}{\sqrt{5154.49}\ \sqrt{44900030}}$$

$$= \frac{423576.5}{481078.8984}$$

$$= 0.8805$$

Coefficient of determination (r^2) $\quad = (0.8805)^2$

$$= 0.7753$$

Standard error of Correlaiton $f_E A$ $\quad = \dfrac{1\,Z\,r^2}{\sqrt{n}}$

$$= \dfrac{1\,Z\,0.7753}{\sqrt{5}}$$

$$= 0.1005$$

P.E. $\quad = 0.6745 \text{ x } \dfrac{1\text{-}r^2}{\sqrt{n}}$

$\quad = 0.6745 \text{ x } 0.1005$

$\quad = 0.0678$

b= regression coefficient

According to the principle of least square two normal equation for estimation of numerical constant a and b given by:

$\phi\psi = na + b\,\phi\varepsilon$
$\phi\varepsilon\,\psi = a\,\phi\varepsilon + b\,\phi\varepsilon^{\,2}$

Solving two normal equations, we get

b $\quad = \dfrac{y\phi\varepsilon\,\psi\,Z\phi\varepsilon\;.\;\phi\psi}{y\phi\varepsilon^{\,2}\,Z f\!\phi\varepsilon\,A}$

$$= \dfrac{5 \text{ x } 1129480.19 \text{ - } 446.29 \text{ x } 11705}{5 \text{ x } 40865.85 \text{ - } (446.29)^2}$$

$$= \dfrac{423576.5}{5154.49}$$

$$= 82.1762$$

…a $\quad = \overline{\psi}\,Z\,b\overline{\varepsilon}$

$\quad =2341\text{-}82.1762 \text{ x } 89.26$

$\quad = \text{-}4994.0476$

Hence, required simple equations as follows:

Y $\quad = a+bx$
$\quad = \text{-}4994.0476+82.1762X$

$$\text{S.E.E.} = \sqrt{\dfrac{\phi\psi^2\ \mathbb{Z}a\phi\psi\ \mathbb{Z}b\phi\varepsilon\ \psi}{n\ \mathbb{Z}2}}$$

$$= \sqrt{\dfrac{36381411\ \mathbb{Z}\,(\mathbb{Z}4994.0476)\ x11705\ \mathbb{Z}82.1762\ x1129480.19}{5\ \mathbb{Z}2}}$$

$$= \sqrt{\dfrac{2020348.17}{3}}$$

$$= 820.6396$$

$$S_b = \dfrac{\text{S.E.E.}}{\sqrt{\phi(\varepsilon - \overline{\varepsilon})^2}}$$

$$= \dfrac{820.6396}{32.1075}$$

$$= 25.5591$$

$$t = \dfrac{b}{S_b}$$

$$= \dfrac{82.1762}{25.5591}$$

$$= 3.2151$$

For NIBL,

EPS (X)	MPS (Y)	X^2	Y^2	XY	$\int\!\varepsilon\ \mathbb{Z}\overline{\varepsilon}\ \text{Å}$
37.4	1388	1398.79	1926544	51911.2	9.99
52.5	705	2756.25	497025	37012.5	142.56
39.1	515	1528.81	265225	20136.5	2.13
27.6	511	761.76	261121	14103.6	167.96
46.2	784	2134.44	614656	36220.8	31.81
$\phi\varepsilon = 202.8$	$\phi\psi = 3903$	$\phi\varepsilon^2 = 8580.02$	$\phi\psi^2 = 3564571$	$\phi\varepsilon\psi = 159384.6$	$\phi\!\int\!\varepsilon\ \mathbb{Z}\overline{\varepsilon}\ \text{Å} = 354.45$

Regression of Y on X, Y = a+bx
Where,

$$\overline{\varepsilon} = \dfrac{\phi\varepsilon}{N} = \dfrac{202.8}{5} = 40.56$$

$$\overline{\psi} = \dfrac{\phi\psi}{N} = \dfrac{3903}{5} = 780.6$$

Coefficient of correlation $(r) = \dfrac{N\phi\varepsilon\,\psi - \phi X.\phi\psi}{\sqrt{y\phi\varepsilon^{2}\,Z f\phi\varepsilon\,\mathring{A}}\,\sqrt{y\phi\psi^{2}\,Z(\phi\psi)^{2}}}$

$$= \dfrac{5\,x\,159384.6\,Z\,202.8\,x\,3903}{\sqrt{5\,x\,8580.02\,Z\,(202.8)^{2}}\,\sqrt{5\,x\,3564571\,Z\,(3903)^{2}}}$$

$$= \dfrac{5394.6}{67743.3962}$$

$= 0.0796$

Coefficient of determination (r^{2}) $= (00.0796)^{2}$

$= 0.006336$

Standard error of correlation (r) $= \dfrac{1\,Z\,r^{2}}{\sqrt{n}}$

$$= \dfrac{1\,Z\,0.006336}{\sqrt{5}}$$

$$= \dfrac{0.9937}{2.2361}$$

$$= 0.4444$$

P.E. $= 0.6745\,x\,\dfrac{1 - r^{2}}{\sqrt{n}}$

$= 0.6745\,x\,0.4444$

$= 0.2995$

b= regression coefficient

According to the principle of least square two normal equation for estimation of numerical constant a and b given by:

$\phi\psi = na + b\,\phi\varepsilon$

$\phi\varepsilon\,\psi = a\,\phi\varepsilon + b\,\phi\varepsilon^{2}$

Solving two normal equations, we get

b $= \dfrac{y\phi\varepsilon\,\psi\,Z\phi\varepsilon\,.\,\phi\psi}{y\phi\varepsilon^{2}\,Z f\phi\varepsilon\,\mathring{A}}$

$$= \dfrac{5\,x\,159384.6\,Z\,202.8\,x\,3903}{5\,x\,8580.02\,Z\,(202.8)^{2}}$$

$$= \frac{5394.6}{1772.26}$$

$$= 3.0439$$

$$\therefore a = \overline{\psi}\, Zb\overline{\varepsilon}$$

$$= 780.6 - 3.0439 \times 40.56$$
$$= 780.6 - 123.4609$$
$$= 657.1390$$

Hence, required simple equation as follows:

$$Y = a + bx$$
$$= 657.1390 + 3.0439X$$

$$\text{S.E.E.} = \sqrt{\frac{\phi\psi^2\, Za\phi\psi\, Zb\phi\varepsilon\, \psi}{n\, Z2}}$$

$$= \sqrt{\frac{3564571\, Z657.1390\, x\, 3903\, Z3.0439\, x\, 159384.6}{5\, Z2}}$$

$$= \sqrt{\frac{514606.6397}{3}}$$

$$= \sqrt{171535.5466}$$

$$= 414.1685$$

$$(S_b) = \frac{\text{S.E.E.}}{\sqrt{\phi(\varepsilon - \overline{\overline{X}})}}$$

$$= \frac{414.1685}{\sqrt{354.45}}$$

$$= 21.9989$$

$$t = \frac{b}{S_b}$$

$$= \frac{3.0439}{21.9989}$$

$$= 0.1384$$

For HBL,

EPS (X)	MPS (Y)	X^2	Y^2	XY	$(Y - \bar{Y})^2$
61.90	1760	3831.61	30976.00	108944	376.36
31.80	816	1011.24	665856	25948.8	114.49
44.66	575	1994.52	330625	25679.5	4.67
39.94	653	1595.20	426409	26080.82	6.55
34.19	700	1168.96	490000	23933	69.06
$\sum X = 212.49$	$\sum Y = 4504$	$\sum X^2 = 9601.53$	$\sum Y^2 = 5010490$	$\sum XY = 210586.12$	$\sum (Y-\bar{Y})^2 = 571.13$

Regression of Y on X, Y = a+bx
Where,

$$\bar{X} = \frac{\sum X}{N} = \frac{212.49}{5} = 42.50$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{4504}{5} = 900.8$$

Coefficient of correlation $(r) = \dfrac{N\sum XY - \sum X.\sum Y}{\sqrt{\sum X^2 - (\sum X)^2}\ \sqrt{\sum Y^2 - (\sum Y)^2}}$

$$= \frac{5 \times 210586.12 - 212.49 \times 4504}{\sqrt{5 \times 9601.53 - (212.49)^2}\ \sqrt{5 \times 5010490 - (4504)^2}}$$

$$= \frac{95875.64}{53.4383 \times 2183.2164}$$

$$= 0.8218$$

Coefficient of determination (r^2) $= (0.8218)^2$

$$= 0.6754$$

Standard error of correlation $(r) = \dfrac{1 - r^2}{\sqrt{n}}$

$$= \frac{1 - 0.6754}{\sqrt{5}}$$

$$= \frac{0.3246}{2.2361}$$

$$= 0.1452$$

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

$$= 0.6745 \times 0.1452$$

$$= 0.0979$$

b= regression coefficient

According to the principle of least square two normal equation for estimation of numerical constant a and b given by:

$$\phi\psi = na + b\phi\varepsilon$$
$$\phi\varepsilon\,\psi = a\phi\varepsilon + b\,\phi\varepsilon^2$$

Solving two normal equations, we get

$$b = \frac{y\phi\varepsilon\,\psi\,Z\phi\varepsilon \;.\;\phi\psi}{y\phi\varepsilon^2\,Z\!f\!\phi\varepsilon\,Å}$$

$$\frac{5\,x\,210586.12\,Z\,212.49\,x\,4504}{5\,x\,9601.53\,Z\,(212.49)^2}$$

$$= \frac{95875.64}{2855.6499}$$

$$= 33.5740$$

$$\ldots a = \overline{\psi}\,Zb\overline{\psi}$$

$$= 900.8 - 33.5740 \times 42.50$$

$$= 900.8 - 1426.895$$

$$= -526.095$$

Hence, required simple equation as follows:

$$Y = a + bx$$

$$= -526.095 + 33.5740\,X$$

$$\text{S.E.E.} = \sqrt{\frac{\phi\psi^2\,Za\phi\psi\,Zb\phi\varepsilon\,\psi}{n\,Z2}}$$

$$= \sqrt{\frac{5010490\,Z(Z526.095)\,x\,4504\,Z\,33.5740\,x\,210586.12}{5\,Z2}}$$

$$= \sqrt{\frac{309803.487}{3}}$$

$$= 321.3531$$

$$(S_b) \quad = \frac{\text{S.E.E.}}{\sqrt{\phi(\varepsilon - \overline{\overline{X}})}} \qquad = \frac{321.3531}{23.8983} \quad = 13.4467$$

$$t = \frac{b}{S_b}$$

$$= \frac{33.5740}{13.4467}$$

$$= 2.4969$$

For BOKL,

EPS (X)	MPS (Y)	X^2	Y^2	XY	$\int \varepsilon \; Z\varepsilon \; Å$
54.68	1825	2989.90	3330625	99791	128.14
43.08	840	1855.89	705600	36187.2	0.0784
44.51	570	1981.14	324900	25370.7	1.3225
37.88	628	1434.89	394384	23788.64	30.0304
36.64	553	1342.49	305809	20261.92	45.16
$\phi\varepsilon = 216.79$	$\phi\psi = 4416$	$\phi\varepsilon^2 = 9604.31$	$\phi\psi^2 = 5061318$	$\phi\varepsilon\psi = 205399.46$	$\phi\int\varepsilon \; Z\varepsilon \; Å = 204.73$

Regression of Y on X, Y = a+bx
Where,

$$\overline{\varepsilon} \quad = \frac{\phi\varepsilon}{N} = \frac{216.79}{5} = 43.36$$

$$\overline{\psi} \quad = \frac{\phi\psi}{N} = \frac{4416}{5} = 883.2$$

Coefficient of correlation $\int\varepsilon \; Å = \dfrac{N\phi\varepsilon\psi - \phi X.\phi\psi}{\sqrt{y\phi\varepsilon^2 \; Z\int\phi\varepsilon \; Å}\sqrt{y\phi\psi^2 \; Z(\phi\psi)^2}}$

$$= \frac{5 \, x \, 205399.46 \, Z \, 216.79 \, x \, 4416}{\sqrt{5 \, x \, 9604.31 \, Z(216.79)^2} \; \sqrt{5 \, x \, 5061318 \, Z(4416)^2}}$$

$$= \frac{69652.66}{31.9945 \, x \, 2409.4676}$$

$$= 0.9035$$

Coefficient of determination (r^2) = $(0.9035)^2$

Standard error of correlation $\mathcal{E}A$ = $\dfrac{1 Z r^2}{\sqrt{n}}$

$$= \dfrac{1 Z 0.8163}{\sqrt{5}}$$

$$= \dfrac{0.1837}{2.2361}$$

$$= 0.0822$$

P.E. = $0.6745 \, x \, \dfrac{1 - r^2}{\sqrt{n}}$

$$= 0.6745 \text{ x } 0.0822$$

$$= 0.0554$$

b= regression coefficient

According to the principle of least square two normal equation for estimation of numerical constant a and b given by:

$\phi\psi$ = na+b$\phi\varepsilon$
$\phi\varepsilon\,\psi$ = a$\phi\varepsilon$ + b $\phi\varepsilon^2$

Solving two normal equations, we get

b = $\dfrac{y\phi\varepsilon\,\psi\,Z\phi\varepsilon\,.\phi\psi}{y\phi\varepsilon^2\,Z\phi\varepsilon\,\mathring{A}}$

$$= \dfrac{5\,x\,205399.46\,Z\,216.79\,x\,4416}{5\,x\,9604.31\,Z\,(216.79)^2}$$

$$= \dfrac{1026997.3\,Z\,957344.64}{48021.55\,Z\,46997.9041}$$

$$= 68.0437$$

...a = $\overline{\psi} - b\,\overline{\varepsilon}$

= 883.2 – 68.0437 x 43.36

= 883.2 – 2950.3748

= -2067.1748

Hence, required simple equation as follows:

$Y \qquad = a + bx$

$\qquad = a + bx$

$\qquad = -2067.1748 + 68.0437X$

$$\text{S.E.E.} = \sqrt{\frac{\phi\psi^2 \; \Sigma a\phi\psi \; \Sigma b\phi\epsilon \; \psi}{n \; \Sigma 2}}$$

$$= \sqrt{\frac{5061318 \; \Sigma(\Sigma 2067.1748) \, x \, 4416 \; \Sigma 68.0437 \, x \, 205399.46}{5 \; \Sigma 2}}$$

$$= \sqrt{\frac{213822.677}{3}}$$

$$= \sqrt{71274.2257}$$

$$= 266.9723$$

$$(S_b) \qquad = \frac{\text{S.E.E}}{\sqrt{\phi\{\epsilon \; - \overline{X}\}}}$$

$$= \frac{266.9723}{\sqrt{204.73}}$$

$$= \frac{266.9723}{14.3084}$$

$$= 18.6584$$

$$t \qquad = \frac{b}{S_b}$$

$$= \frac{68.0437}{18.6584}$$

$$= 3.6468$$