Impact of Dividend Practice on Market Price of Stock of Selected Banks

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RECOMMENDATION

This is to certify that the thesis:

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has been prepared as approved by this department in the prescribed format of faculty of Management. This thesis is forwarded for examination

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DECLARATION

I hereby declare that the work reported in this thesis entitled "**Impact of Dividend Practice On Market Price of Stock of Selected Banks"** submitted to Shanker Dev campus, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfilment of the requirements of the Master's Degree in Business Studies (MBS) under the supervision of my thesis supervisors Shree Bhadra Neupane and Pitri Raj Adhikari, of Shanker Dev Campus, Tribhuvan University.

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As the partial fulfillment of the MBS degree, I have prepared this report. During the course, I worked with sincerity, honesty and diligently, as far as possible. But beside my continual efforts, I also got unforgettable support from different people and completing my work.

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Ambika Basnet

Researcher

LIST OF ABBREVIATION

a	=	Regression constant
b	=	Regression coefficient
BOKL	=	Bank of Kathmandu Ltd.
C.F.	=	Correlation Factor
C.V.	=	Coefficient of Variation
D.F.	=	Degree of Freedom
DP	=	Dividend Percent
DPR	=	Dividend Payout Ratio
DPS	=	Dividend Per Share
DY	=	Dividend Yield
EBL	=	Everst Bank Ltd.
EPS	=	Earning Per Share
EY	=	Earying Yield
HBL	=	Himalayan Bank Ltd.
Ibid.	=	From the same study
K	=	Number of Sample
Ltd.	=	Limited
Max.	=	Maximum
Min.	=	Minimum
MPPS	=	Market Price Per Share
MPS	=	Market Price Per Share
MSB	=	Mean Sum of Square Between Sample
MSW	=	Mean Sum of Square within Sample
N	=	Total Number of Observation
NABIL	=	Nepal Arab Bank Limited
NIBL	=	Nepal Investment Bank Ltd.
No.	=	Number
NW	=	Net Worth

P	=	Page number
P.E.(r)	=	Probable Error
P/E Ratio	=	Price Earning Ratio
r	=	Coefficient of Correlation
r^2	=	Coefficient of Determination
S.D.	=	Standard Deviation
$S.E_e$	=	Standard Error of the Estimate
S_b	=	Standard Error of Regression Coefficient
Signi. /Insigni	=	Significant/Insignificant
SSC	=	Sum of Square between Sample / Sum of Square between Column
SSC	=	Sum of square between samples
SSW	=	Sum of Square within Sample
T	=	Grand Total
T.U.	=	Tribhuvan University
TSS	=	Total sum of square
TSS	=	Total Sum of Square

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CHAPTER-I
INTRODUCTION

1.1 Background of the study

The establishment of banks and insurance companies are necessary either by the government or by private sectors. Both have equal contribution for the generation as well as mobilization of the funds. It is always discussed that the participation of the private sectors plays even more important role for any the economic development. But, however, even with the rapid development views of financial institutions, Nepal has not been able to achieve the desired income so far which is due to the poor capital market situation of the nation and due to the initial stage of modern economy.

Among these circumstances, capital market and its extensity also play great roles. Capital market generates and liquidates the security as per the requirements. So is the reason extension of capital market is only the way to productive mobilization of the funds. But unfortunately, Nepalese capital market has not efficient communication network even today. It has made capital market less efficient and inefficiency results the risk. Even though, it is hoped that Nepalese capital market will be moving towards efficiency in the earlier future.

The history of securities market began with the flotation of shares by Biratnagar Jute Mills Ltd. And Nepal Bank Ltd. in 1937. Introduction of the company Act in 1964, the first insurance of Government Bond in 1964 and the establishment of securities Exchange Centre Ltd. In 1976 were other significant development relating to capital markets.

When security exchange centre converted into Nepal Stock Exchange (NEPSE) in 1993 , the objectives of this institution become; to import free marketability and liquidity to the government and corporate securities by facilitating transactions in its only trading floor through market intermediaries i.e. brokers as well as market makers.

Nepal Stock Exchange, in short NEPSE, is non-profit organization, operating under securities Exchange Act, 1983. NEPSE opened its trading floor on 13th January 1994. Members of NEPSE are permitted to act as intermediaries in buying and selling of government bonds and listed corporate securities. At present, there are 27 member brokers and 2 market makers, who operate on the trading floor as per the Securities Exchange Act, 1983, rules and byelaws. *(www.nepalstock.com)*

At present Nepal have so many banks and insurance companies performing different tasks. It shows there is perfect competition between these institutions. In some cases both insurance companies and commercial banks work mutually. Commercial banks are more effectively working than insurance companies. It is because, the banks have highly skilled personnel, modern banking services, management skills, quick and prompt services, international network and country suited services. However, two big banks namely, Nepal Bank Ltd. And Rastriya Banijya Bank are going to be run by contracted management, which shows still Nepalese commercial banks have some practical problems and limitations.

Besides these all, banks are performing various functions such as money creation and generation, deposit collection, credit extension, credit card issue and cheque transaction, import letter of credit, traveler cheque, export bill, issue of draft, telex transfer and safe keeping of value.

Insurance companies on the other hand, playing duel role in the economy, safeguard the insured against the risk of the loss of the life and property and intermediate scares of resources if a company has surplus cash, it can buy back outstanding numbers of shares, which is known as repurchase of shares. In the developed capital market, corporations are allowed to buy shares back for better utilization of their unused cash. However, Nepalese company acts 1997, section 47 has prohibited company from purchasing its own shares. It states that no company shall purchase its own shares and supply loans against the security of its own shares.

"People invest their hard money for satisfactory and expected return. To these objectives, firms distribute the earning to their shareholders. Earning is that amount which remains after deducting or submitting all operational and non-operational expenses. Stockholders' expectations may vary with their investment priorities, even though." *(Kelinger; 1966:98).* Some participates in capital market in order to have some dividend as return whereas some hope for capital appreciation of stocks. In fact primary intention in investing share is to earn as dividend but in Nepalese context people are interested in investing with keeping the views and expectation of more capital appreciation of stocks, but that is secondary expectation, theoretically.

The main focus of investors however is the dividend. But there is not any consistency and regular practice of dividend announcement in different firms. They are exactly different as per their dividend policies. Similarly in the secondary market the declaration of the dividend or the dividend policy of the firm changes the market price of the shares. Therefore it is expected that there is some impact of dividend policy over the market price of the stock.

1.2 Dividend Policy & Market Price of Stock (MPS)

Once a company makes a profit, they must decide on what to do with those profits. They could continue to retain the profits within the company or they could pay out the profits to the owners of the firm in the form of dividends. Once the company decides on whether to pay dividends, they may establish a somewhat permanent dividend policy, which may in turn impact on investors and perceptions of the company in the financial markets. What they decide depends on the preferences of investors and potential investors.

Dividend in the simple term is part of earnings, which is announces to distribute between the stockholders. In one way it is the cost of sacrificing hard money butas an investment but unfortunately, some company pay whole earnings as dividend and some company do not and some company retains more and pays less as dividend. In practice, company pays whole earnings as dividend at the beginning to create better image and existence in the financial

market but later they may change their policy and announce a certain percentage of dividend payout term. The decision to keep some portion of earning or pay some portion of earnings as dividend is known as dividend policy.

The dividend payout ratio may be different but the common dividend payout ratio (D/P ratio) is 40% as different studies reveal. Keeping, all these things into consideration, it could be said that, the actual owner of the firm or company are not treated rightly by not giving sufficient and reasonable dividend. Moreover in some companies dividend is not announced. But recently the trends of the dividend payment are increasing.

The present scenario of the world's capital market is more dependent in capital appreciation base. But for capital appreciation improvement, some sorts of dividend policy are practiced or adopted by a firm, is vital. In the Nepalese context, dividend policy is less balanced. Theoretical and practical deviation has proved, everything as written is not practiced and everything practiced is not of actual theory. Therefore dividend policy is the practice, strategy or decision made by a firm as per their requirements to establish market reputation as well as to meet general expectations of the shareholders.

"The payment of the corporate dividend is at the discretions of the Board of Directors. Most corporations pay dividend quarterly. Dividends may be paid in cash, stock or merchandise. Cash dividend is the most common; merchandise dividends are at least common. Stockholders are not promised a dividend, but he/she grows to expect certain payment on historical dividend pattern of the firm. Before dividend are paid to common stockholders the claims of creditors, the government and preferred stockholders must be satisfied." *(Gitman; 1988: 609)*

Market price of the stock is the trading price of the stock listed in authorized or legal stock exchanges. In context of Nepal, MPS is the price that is coated for purchasing or selling under Nepal Stock Exchange Act or related laws and regulations, on the stock exchange floor.

MPS is that value of stock, which can be obtained by a firm from the market. Market value of a share is one of the variables, which is affected by the dividend per share and earning per share of the firm. If the earning per share and dividend per share is high, the market value per share will also be high. Market values of the share may be high or low than the book values. If the firm is growing concern and it's earning power is greater than cost of capital, the market value of the share will be higher than the book value. If the firm's earning capacity is lower than the cost of capital MPS will also be lower. MPS determined by capital market.

Market price of the stock usually fluctuates by the adequate information. No one can earn more in the inefficiency and inefficiency is legally prohibited in order to regulate the security market in every nation. But being focused in this study, dividend policy and its impact on market price of stock, there should be discussed different models and practices which have significant effects in MPS or not. So MPS and security valuation are integral parts in it. With out valuation no one can coat the price without price there is no chance of trading.

Every day in newspaper one can see the market price of the different shares from different companies. The trading of the share definitely requires the MPS, which can be obtained by the stock valuation. "Share valuation in an economic progress generates rational securities prices. Although the price fluctuations may appear to be chaotic, they are random fluctuations that result from the random arrival of the new information." *(Clark; 1990: 207)*

Dividend policy and MPS has always correlation; if the company pays high dividend the MPS increases and vice-versa. But in some cases out of this interrelation, the price may remain constant or decrease too. Therefore, the information lack or flow is also vital in the analysis of MPS.

1.3 Focus of the study

The main focus of the study is to examine the practice made by the Nepalese firm in regards to the dividend policy. But for whole these purpose different other studies are going to be done i.e. comparison of earning per

share(EPS),dividend per share(DPS),market price per share(MPS) and others as per the requirement with respect to the sample firm. They study will be more focusing on the dividend policy and MPS however other qualitative discussion will be submitted including the Nepalese practices. The relationship between different variables(s) will be individually and combine analyzed in order to state the particular suggestion. In the same way, the study will be focus on behavioral aspects of Nepalese investors but in regards to dividend practices made in past five years by the sample firms.

1.4 Statement of problems

Dividend policy itself is not well-known subject or practice by large numbers of financial community even today. Form the past many years it has been tried to see the relevant and practicable dividend policy in the firms all over the world. In context of Nepal, firms have followed some kinds of dividend policy but of course, with an adhoc trend. That is the reason; it can be said that dividend policy is not matching with the earnings made by the firms. But at the same time, it is the truth that many scholars have not been able to define simple and conclusive relationship between dividend policy and market price of the stock. Some experts believe to have positive relationship but other believes no relation at all.

The capital market of Nepal is just in the way to development, yet investors are investing in new companies with out having the perspective analysis of those companies. In popular practice of Nepal, when the firms earn big earnings they retain more and when they do not have good figure of earnings, company announces high dividend to protect their image in the capital market. Studying the dividend trend of Himalayan bank it can be proved as this bank had paid Rs35 in the year 1995/96 when the EPS was Rs103.43 but in the year 1997/98 it had paid Rs110 as dividend, it is because the bank wanted to increase the perception value to protect the image in the capital market. Many researches have been made earlier in this concern. However, no other studies have been made to see the impact of dividend policy on the market price of the stock

including the actual scenario of Nepalese capital market. Moreover, research question is to find out what sorts of limitation or gap have made a culture of stock price change. Therefore the main focus of this study is to deal with the following problems so far it will be possible to cope with: -

a) What is the impact of dividend policy on the market price of the stock?
b) Is there any uniformity between the firms in regards to financial indicators and variables?
c) What are the prevailing policy and practices regarding with reference to the sample firms?
d) What are the major factors affecting dividend policy of firm?
e) Is DPS proportionate to the firm's EPS?
f) Is there any consistency in EPS, DPS, MPS and DPR of sample firms?

1.5 Objectives of the study

i. To find the impact of dividend policy on market price of stock.
ii. To find out if there is any uniformity in DPS, EPS, and MPS of the sample firms.
iii. To study the prevailing policies and practices regarding dividend in Nepalese firms with reference to the sample firms.
iv. To find major factor affecting dividend policy of the firm.
v. To see whether dividend distributions are regular or not.
vi. To find out the financial position of the sample banks.

1.6 Significance of the study

As dividend is one of the factors in every organization and dividend policy decision is one of the most important decisions, this might serve to be important information for these respective firms taken as sample. Besides, the shareholders and financial institutions may also be benefited from this study. Moreover, this study will support the future researcher by providing valuable information. Especially the significance of this study can be summarized in the following points:

1. The study helps to the management and policy maker in setting and making a suitable dividend policy.
2. The dividend policy of the banking and insurance sector plays vital role for socio-economic development in the nation , that is way the study of dividend policy of these sector is needed so far as possible,
3. To raise public awareness about dividend policy and market price of share relation in order to help them for rational decision of their investment.

1.7 Limitations of the study

The following points are as follows:-

i. Most of the data used in this study, secondary nature; therefore there might be reporting errors.
ii. All the data are based in fiscal year 2000/2001 to 2008/2009 for commercial Banks.
iii. Among the different aspects of dividend policy only the market price of the stock been selected & only cash dividend is taken for the analysis.
iv. Due to annual distribution system in Nepal, dividend has not been considered for calculation of holding monthly periodic return.
v. The data being taken from secondary source the authentic of the data is dependent on the accuracy of the website used.

1.8 Organization of the study

This study has been organized into five chapters:

Chapter I: Introduction

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

Chapter II: Review of Literature

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

Chapter III: Research Methodology

This chapter deals with research methodology and it includes research design, population and sample, source and technique of data collection, data analysis tools and limitation of the methodology.

Chapter IV: Data Presentation & Analysis

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

Chapter V: Summary, Conclusion and Recommendations

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

Lastly, bibliography and appendices also are incorporated after the chapter V.

CHAPTER- II
REVIEW OF LITERATURE

This chapter contains the review of different sources of literature such as books, journals, research paper and other studies related to the dividend policy. It has been expected that the review will help to make the research more effective and useful. The chapter has been divided mainly into four parts as: Conceptual Framework, Review of NRB Directives, Review of Journals and Articles and Review of Thesis.

2.1 Conceptual Framework

2.1.1 Dividend

Dividend refers to that portion of a firm's net earning, which are paid out to the shareholders. Dividends are generally paid in the form of cash. So that the payment of dividend reduces the cash balance of the company as well as reduces the amount of retained earnings. In theory of finance, dividend decision plays a very vital role. Dividend decision however is still a crucial as well as controversial area of managerial finance. It is more technical area of finance in the sense that it is complex on having numerous implications for the firm. Dividend policy may affect the area such as financial structure of the firm, flow of funds, corporate liquidity, stock prices, investor's satisfaction, growth of the firm etc. Like other major decisions of the firm i.e. investment and financing decision, the dividend decision has major role in all business organizations. "Many variables influence dividends, however for example, firm's cash flows and investment needs may be too volatile for it to set a very high regular dividend. Yet, it may desire a high dividend payout to distribute funds not necessary for reinvestment. In such a case, the directors can set a relatively low regular dividend low enough that it can be maintained even in low profit years or in years when a considerable amount of reinvestment is needed-and supplement it with an extra dividend in years when excess funds are available.*"(Weston & Brigham; 1964: 172)*

2.1.2 Dividend Policy

Dividend policy is the policy of any firm/organization/company regarding the division of its profit between shareholders as dividend and retention of the profit for making investments. The dividend policy includes all aspects related to the payment of dividend. There is inverse relationship between cash dividend and retained earnings. In other words, if the company pays more dividends to its shareholders, there will be less retained earnings for making investments and vice-versa. "Dividend policy determines the division of earnings between payments to stockholders and reinvestment in the firm. Retained earnings are one of the most significant sources of funds for financing corporate growth, but dividends constitute the cash flows that accrue to stockholders." *(Pandey; 1989: 67*)

Thus, the dividend payout reduces the amount of retained earnings in the firm and affect total amount of internal financing. The decision depends upon the objective of the management for wealth maximization. Dividend decision is one of three major decision of managerial finance. The firm has to choose between distributing profit as dividend to the shareholders or reinvesting the profit into the business for more profitable opportunities. It is better to pay the dividend, if the payment will lead to the wealth maximization. If not it is better to retain them for financial investment. Thus the relationship between dividend and value of the firm is considered as the criterion for decision-making. Shareholders of a company always aim to maximize their wealth. The shareholders wealth includes not only the market price of the stock but also the current dividend the company pays to them. But the dividend payout reduces the total amount of internal financing. Thus the dividend policy should be concerned with the well being of the shareholders, which can be partially measured by dividend received but more accurately measured in terms of the market value of the stock. Most of the shareholders want to maximize their wealth in two forms i.e. capital gain and cash dividend. Capital gain is the profit resulting from sale of the common stock where as dividend is the share in profit of the company. "The shareholders, in one hand expect an increase in

market price of the share and in the other hand they also expect distribution of firm's earning in the form of dividend." *(Kreps & wacht; 1975: 45).* From the firms having stable image in the market, the investors expect regular dividend. Thus this priority takes over the desire to retain earnings for financial expansion and growth. Thus, shareholders expectation can be fulfilled either through capital gains or dividends. It is thus very important to maintain balance between the shareholders' interest and corporate growth resulting from internal financing i.e. amount retained.

Thus dividend decision is one of the central and major decision area related to the policies seeking to maximize the value of firm's common stock as well as the wealth of the shareholders.

2.1.3 Forms of Dividend

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

a) Cash Dividend

The portion of earning paid in form of cash to the investors in proportion to their share of the company is known as cash dividend. After the payment of dividend to the shareholders both the total assets and net worth of the company decreases by the amount equal to the cash dividend. For the payment of dividend, company should sustain adequate balance of cash. In case of

insufficiency in cash balance for the payment of dividend, funds to be borrowed for this purpose are difficult. Thus, a company should regularly perform cash planning for maintaining a stable dividend policy. In context of Nepal, cash dividend is the most popular form of dividend and is mostly adopted by many companies/firms/financial institutions. However it can be said that the volume of cash dividend depends on the earning of the organization, attitude of management, situation of the market, cost of external financing etc.

b) Stock Dividends/Bonus Share

Stock dividend refers to the payment of additional stock to the shareholders. "A stock dividend is paid in additional shares of the stock instead of in cash and simply involves a book-keeping transfer from retained earning to the capital stock account." *(Weston & Copeland: 1986: 680)* A stock dividend represents a distribution of shares in addition to the cash dividend to the existing shareholders. This has the effect of increasing the number of outstanding shares of the company. The declarations of the bonus shares will increase to paid up shares capital and reduce the reserve and surplus of the company. The total net worth is not affected by the bonus issue. In fact, if represents nothing more than recapitalization of the owner's equity portion, i.e. the reserve and surplus. It is simply and accounting transfer from retained earnings to capital stock.

c) Scrip Divided

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

Therefore, in order to overcome the temporary shortage of cash, sometimes company uses scrip dividends.

d) Property Dividend

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

e) Optional Dividend

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

f) Bond Dividend

This type of dividend is distributed to the shareholders in the form of bond. It helps to postpone the payment of cash. In other words, company declares dividend in the form of its own bond with a view to avoid cash outflows. They are issued rarely. They are long term enough to fall beyond the current liability group. The stockholders become secured creditors if the bond carries lien on assets. But none of these types except cash and stock dividend have been practiced in Nepalese corporations although they have ample scope for application. So for in this study, the term dividend generally refers to cash dividend.

2.1.4 Factors Influencing Dividend Policy

While establishing a dividend policy in any organization, various factors should be taken into consideration. Dividend is that decision, which is influenced by many internal as well as external factors. Management has to consider both economic and non-economic factors before establishing any dividend policy. In practice, the financial executives consider the following factors when approaching a dividend decision.

a) Stability of Earnings

A firm that has relatively stable earnings is often able to anticipate approximately what its future earnings will be. Such a firm is therefore more likely to pay out a higher percentage of its earning than a firm with fluctuating earnings. The unstable firm is not certain that in succeeding years the anticipated earnings will be realized, so it is likely to retain a higher proportion of current earnings. A lower dividend will be easier to sustain if earnings fall off in the future.

b) Profit Rate

The expected rate of returns on assets determines the relative attractiveness of paying out earnings in form of dividend to the shareholders who will use them elsewhere or using them in the present venture.

c) Past Dividends

A firm with record of past dividend payments strive to maintain the same in the future. Dividends are habit forming. If the market does not receive its expected dosage, the stock price will suffer. The majority of firms surveyed indicated they would maintain their current dividend payments even if they were operating at a net loss for an interim period. Furthermore, Baker, Farrelly and Edelman find that managers strongly agree with the statement that a firm should attempt to maintain a persistent record of dividend payments.

d) Liquidity Position

One of the major factors to be considered in making the dividend decisions is the availability of cash or liquidity position of a company. As dividend symbolize a cash outflow, the greater the cash position and overall liquidity of a company, the greater its ability to pay a dividend regularly. Even a company that is growing and profitable may not be liquid, for its funds may go into investment opportunities, fixed assets and permanent current assets. Thus, even if a firm has a record of earning, it may not be able to pay cash dividends because of its liquidity position. In deed, a growing firm even a very profitable one typically has a pressing need for funds. In such a situation the firm may elect not to pay cash dividend.

e) Need to Repay Debt

When a firm has issued debt to finance expansion or to substitute for other form of financing, it is faced with two alternatives. It can refund the debt at maturity by replacing it with another form of security or it can make provision of paying off debt. If the decision is to retire the debt, this will generally require the retention of earning. In such case also the dividend decision will be effected.

f) Restrictions in Debt Contracts

Debt contracts, especially when long-term debt is involved, often confine a firm's ability to pay cash dividends. In other words the protective covenants in bond indenture or loan agreement often include a restriction on payment of dividends. The restriction is employed by the lenders to conserve the company's ability to service debt. Generally it is articulated as maximum percentage of earnings. Similarly preferred stock agreements generally state that no cash dividends can be paid on the common stock until all accrued preferred dividends have been paid. These types of limitations persuade the dividend policy of the firm.

g) Tax of Shareholders

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

h) Rate of Asset Expansion

There is need of more financing if a firm is growing rapidly. The greater the future need of funds, the more likely the firm is to retain its earning rather than pay them out in form of dividends. But if earnings are paid out as dividend and are subjected to high personal income tax rates only portion of them will be available for reinvestment.

i) Access to the Capital Market

A large and well-established firm with a record of profitability and stability of earning has easy access to capital markets and other forms of external financing. In contrast a small and new firm is riskier for potential investors. Its ability to raise equity or debt funds from capital market is restricted. So it must retain more earning to finance its operation. Thus a well-established firm have higher payout ratio than that of a new or small firm.

j) Legal Restrictions

Legal rules constrain dividend payment on certain conditions as follows:

- Capital impairment rule states that dividend should not be paid out of paid-up capital, which causes adverse effect on security of creditors and preference shareholders.
- The firm should not pay cash dividend greater than the current net profit plus accumulated balance of retained earning. Accumulated loss should

be recouped out of current earnings. This rule is violated by some of Nepalese companies due to management intention and government intervention.

- Insolvent firms i.e. liabilities exceeding assets or unable to pay bills are prohibited for paying cash dividend to protect creditors of the firm.
- If the firm has retained earning to provide opportunity to shareholders for capital gain and thereby evade tax liability of income, under such condition the firm may be forced to pay dividends.

k) Control

With a liberal dividend policy, there may be need of raising fresh capital in future. If the current shareholders can not or do not subscribe the new shares, new stockholders can dilute their controlling interest in the firm. Thus shareholders who are very sensitive to a potential loss of control prefer a low dividend payout policy.

l) Inflation

Inflation also play decisive role in dividend decision. In price rise, the company may have to retain high percentage of earning because of inadequate funds generated from depreciation to replace equipments.

2.1.5 Theories of Dividend

A. Residual Theory of Dividend

"Residual dividend policy is based on the premise that investors prefer to have a firm retain and reinvest earnings rather than pay them out in dividends if the rate of return the firm can earn on reinvested earnings exceeds the rate of return investors can obtain for themselves on the other investments of comparable risk. This theory states that profit should be used first in all profitable investment plans which reflect equal or higher rate of return. Further it is less expensive for the firm to use retained earnings than is to issue new common stock." *(Gautam and Thapa; 2004: 95).*

B. Wealth Maximization Theory

"Larger dividend is announced and distributed to shareholders under this theory in order to maximize their wealth. This theory is generally adopted by the newly established and declining companies to upkeep it's image and retain the shareholder's positive attitude towards the company's stock." *(Pradhan; 1992:15)*

C. Walter's Theory (Walter; 1996: 29-41)

The relevant theory of dividend argues that the dividend policy of the firm affects the value of the shares. So, the dividend is relevant. In those cases where firm announced an increase in their dividend, there is a significant positive reaction in their stock prices. Conversely, in those cases when the firm announced the decrease in their dividend, there is the significant negative reaction in their stock prices.

Walter advocated that the choice of appropriate dividend policy almost always affect the value of the enterprises i.e. share value/price. Walter's study is also based on some assumptions:

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

Value of the stock according to Walter can be calculated by the following equation:-

$$P = \frac{D+R}{\frac{K_e\,(E-D)}{K_e}}$$

Where:

P = market price of an equity share

D = DPS.

E = EPS

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

K_e = market capitalization rate or cost of capital

Walter's focus is in internal rate of return (R) and the cost of capital (K_e) in determining the dividend policy with these two variables; he had tried to conclude some decisions. He therefore, had expected three conditions probably exist:-

Condition 1 (R>K)

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

Condition 2 (R<K)

When internal rate of return(R) is less than cost of capital (K), it advocates that the shareholders can earn a higher return by investing elsewhere. Increasing the dividend in this condition increases the market price per share. It is happened in the declining firm, generally. By distributing entire earning as dividend, the value of the shares will be at optimum level. The dividend payout ratio of 100 would be the optimum dividend policy.

Condition 3 (R=K)

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

Conclusion

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

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

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

D. Modigliani and Miller's Theory (M–M; 1961: 306-309)

It has been argued that dividend policy has no effect either on the price of a firm's stock or its cost of capital, that is, dividend policy is irrelevance. This theory was first introduced by Franco Modigliani and Metron Miller in 1961 and popularly known as M-M Approach. Through an article "dividend policy, growth and valuation of shares' they advocated that dividend policy does not affect the value of the firm i.e. dividend policy has no effect on the share price of the firm. The M-M approach focused the irrelevant effect of dividend policy in the firm valuation arguing that, the value of the firm is determined only by its basic earnings power and its business risk, thus, the value of the firm depends on the income from it assets and not on how this income is split between dividend and retain earnings.

M-M approach is based on the following assumptions:

- Perfect capital market in which all investors are rational. Information available to all at no cost, instantaneous transaction without costs, infinitely divisible securities and no investor large enough to affect the market price of the security,
- An absence of floatation costs on securities issued by the firms,
- A world of no taxes,
- A given investment policy for the firm , no subject to changed,
- Perfect certainty by every investor as to future investment and profits of the firm (but M-M dropped this assumption later)

M-M had tried to prove their theory by different models. Of those are explained below:-

Market value/price of share:

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

$$P_0 = \frac{D_1 + p_1}{1 + k_e} \quad \text{..... (I)}$$

Where:

P_0= market price at the beginning (Zero period)

K_e = cost of equity capital (assumed constant)

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

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

No external financing

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

$$\mathbf{nP_0 = \frac{n\,(d_1+p_1)}{1+Ke}} \quad \textbf{…….. (II)}$$

Where:-

n= numbers of equity shares at zero periods.

Assuming that the retain earnings is not sufficient to finance the investment needs of the funds, in that case issuing new shares is the other alternative. Say m is the number newly issued equity share at price of P_1.

$$\mathbf{nP_0 = \frac{nd_1 + P_1\,(n+m) - mP_1}{1 + K_e}} \quad \textbf{……..(III)}$$

Where:-

n= no. of share at the beginning

m= no. of equity shares issued at the end of the period.

Total number of Shares

The issuing of new stock is determined by the amount of investment in period 1 not financed by retained earnings. The total numbers of new shares can be found out by the following way:

$$\mathbf{mP_1 = I-(E-nd_1)} \textbf{…….(iv)}$$

Where:-

mP_1 = the amount collected by issuing new shares.

m = the numbers of shares

P_1= price of shares

I = total new investment requirement

E = earning of the firm during the period

nd_1 = total dividend paid

$E-nd_1$ = retain earning

Conclusion:-

By substituting the value of mP_1 from equation (IV) to the equation (III), we find:

$$nP_0 = \frac{nd_1+P_1(m+n)-I+E-nd_1}{1+K_e}$$

$$= \frac{P_1(m+n)-I+E}{1+K_e}$$

In such a way, M-M approach concludes its result, that there is no any role of dividend (d_1) in the above equation. So, Modigliani and Miller conclude that dividend policy is irrelevant and dividend policy has no effect on the shares price.

2.1.6 Stability of Dividend

"Stability or regularity of dividend is considered as a desirable policy by the management of most companies in practice. Stability of dividend refers to the amount paid out regularly. Though amount of dividend may fluctuate from year to year and may not be related with earning. Shareholders also generally favor this policy and value stable dividends higher than fluctuating ones. All other things being the same, stable dividends have a positive impact on the market price of the share." *(Sharma; 2001: 338-339).*

There are some reasons to believe that a stable dividend policy does lead to higher stock prices. "First investors can be expected to value more highly dividends that they are surer of receiving since fluctuating dividends are riskier than stable ones." *(Van Horne; 2000:66).* Accordingly, the same average amount of dividend received under a fluctuating dividend policy is likely to have a higher discount factor applied to it than is applied to dividends under a stable dividend policy. This means that a company with a stable dividend will

behave a lower required rate of return or cost of equity capital than one whose dividend fluctuated.

Second many stockholders live on income received in the form of dividends. These stockholders are greatly inconvenienced by fluctuating dividends and they will likely to pay a premium for a stock with a relatively assured minimum dollar dividend. These stock holders are greatly inconvenienced by fluctuating dividends and they will likely to pay a premium for a stock with a relatively assured minimum dollar dividend. Third from the stand point of both the corporation and its stockholder is the requirement of legal listing.

Even though most firms seem to have a policy of paying stable cash dividends, this is not the only policy. The three distinct forms of such stability of dividend payments are as follows:

1) Constant Payout Ratio: The ratio of dividend to earnings is known as payout ratio. Paying a fixed percentage of net earning every year is called constant payout ratio. With this policy the amount of dividend will fluctuate in direct proportion to earning. It ensures that dividends are paid when profits are earned and avoided when it incurs losses. Management generally adopts this type of policy since it is directly related to the company's ability to pay dividend.

2) Stable Cash amount per share: This payout scheme is called constant dividend per share or dividend rate. According to this policy, a company pays a fixed a rupee dividend in each period. This policy is generally preferred by those persons and institutions that depend upon the dividend income to meet their living and operating expenses. This policy doesn't imply that the dividend per share will never increase. When the company reaches new level of earnings and expects to maintain it, the annual dividends per share may be increased. It is easy to follow when earning is stable. If the earning pattern of a company shows wide fluctuations it is difficult to maintain such policy.

3) Low Regular Dividend plus extras dividend: Low regular dividend per share plus extra dividend is a compromise between the first two. According to this policy the low regular dividend can usually be maintained even when earning decline and extra dividend can be paid when excess funds are available. It gives the firm flexibility but it leaves investors somewhat uncertain about what their dividend income will be. This policy may be the best policy, if the firm's earning is quite volatile.

2.1.7 Conflicting theories on Dividends

"Under this conflicting theory on dividends, two basic schools of thought on dividend policy have been expressed in the theoretical literature of finance. First school holds that dividend policy can affect the value of a firm through investor's preferences. Myron Gordon, John Linter and Walter are the theorists of this school of thought. These theorists argue that investor's required rate of return increases as the dividend payout in reduced because investors are more use of receiving dividends payments than income from capital gains that presumably result from retained earnings. These theorists suggest that earnings of a firm with a low payment ratio are typically capitalized at higher rates than the earnings of a high payout firm." *(Gautam and Thapa; 2004: 9.8-9.11).*

The other school associated with Professor Mettron Miller and France Modigliani holds that investors are indifferent to dividend and capital gains and so dividends have no effect on the wealth of shareholders. They argue that the value of the firm depends on the income produced by its assets, not on how this income is split between dividends and retained earnings. According to them value of the firm depends on the firm's earnings, which depends on dividend on its investment policy. The manner in which earnings are dividend into dividend and retained earnings does not affect the value of the firm.

2.2 NRB Directives

Nepal Rastra Bank has been published Unified Directives 2067. It directs to the all financial institutions. Here are some related directives which are concerned for this study, are mentioned below:

Directive No. 4/066:- Provisions Regarding Accounting policy and the format of financial particulars.

Different directives regarding accounting policy and formats of financial particulars have been promulgated for the institutions licensed by this bank, using the authority conferred by section 79 of Nepal Rastra bank Act, 2058.

Directives No. 4 (4):- Short description of Balance Sheet Items.

(2) (c) Dividend assimilation fund: - In case of profit gained and making uniformity among dividend; a sum of it can be distributed after expending for the approval of the proposal of Board of Director and General meeting.

(7) Proposed and dues dividend: - The proposed dividend and the due dividend passed by General meeting can be included in it.

9 (5) Investments: -

(a) Licensed organizations should show investments in three categories. Held for Trade, Available for sale and Held in Maturity.

(b) The bonus share obtained from share investment should be increased and without changing the prime cost, it should be mentioned.

(c) The particulars invested in the share capital of the organization, should be shown in the title of schedule **4.12 (a).**

(1) Company name

(2) Types of share (ordinary share, or preference share), in preference share, dividend rate should be mentioned.

(3) Obtained shares (including bonus share)

(4) Face value of each share.

(5) The cost of licensed organization is shown in prime cost.

(6) The updated listed price of balance sheet, if share is enlisted in stock exchange.

(7) Any company, in which a licensed organization has invested share, has not declared any dividend for 3 years or more than that should be mentioned.

Directive No. 16/066:- Provisions Regarding Financial fund collection.

Following directives relating to collection of financial funds by licensed organization, using the authority conferred by section 79 of Nepal Rastra bank Act, 2058.

Directive No. 16 (3):- To enforce by making the processes or regulation regarding payment and fund collection.

(3) If a shareholder or his /her dose not claims for the dividend within five years of the announcement of the dividend by the licensed organization, the details of such shareholders must be submitted to this bank within the first month of each fiscal year.

(4) Unclaimed dividends, deposits or undistributed dividends according to the sub- sections **(1) or (2)** should be published at least once in a national level newspaper within a month at the end of mentioned time limit. Such cash should be deposited in the account directed by this bank if that cash remains unpaid even after the notice publication in newspaper.

Directive No. 16

(8) Provision Regarding Public Offering: - Licensed banks and financial institutions must have sold or distributed the shares allocated for general public within 2 years of incorporation.

Directive No. 16 (10):- Sub ordinate term debt and redeemable non-convertible preference share can be issued.

(10) The time limit when the investors will be paid their interest gained from debenture payable fixed preference share should be mentioned clearly inside the "Interest/preferred dividend payment timing" clause.

2.3 Review of Journals and Articles

As mentioned earlier, there have been so many studies made by the different persons and institutions for dividend policy and stock price. There are two opinions regarding to dividend payout and market price/value of the shares.

One point of view is that dividends are irrelevant and the amount of dividend payout does not affect the market value of the share. The other is dividends are relevant and the amount of dividend paid affect the market price/value of the shares. Always a critical and confused question ahs arose, whether dividend policy affect the market value of the shares or not. To put light in these matter different studies made by different international scholars and researchers should be overviewed. Therefore some of the main researchers' Journals and Articles are going to be discussed below:

Lamont's (1998), has conducted a study on *"The Aggregate Dividend Payout Ratio Forecast Excess Return on Both Stocks and Corporate Bonds".* It is to mean, high dividends forecast high return and high earnings forecast low return. The correlation of earnings with business conditions gives them predicted power of returns; they contained information about future returns that is not captured by other variables. Dividend and earnings contribute explanation power at short horizon but however for long horizon stock price matters. These are two reasons, why the payout ratio forecast return i.e.

- The payout ratio forecasts return because the level of dividends forecasts return. High dividend predicts high future return.

The payout ratio forecasts return because the level of earning forecasts return.

Pradhan (2003), in his published article on *"Effects of Dividends on Common Stock Prices: The Nepalese Evidence" e*xamined the valuation of firms whose shares are traded in the Nepalese stock market. Using pooled cross section data of 29 companies from 1991 to 1999 with a total of 177 observations.

- It attempts to determine relative importance of dividends and retained earnings in determining market price of share.
- The findings indicate that share value is affected by dividend payments. This finding is consistent with the existence of net preference for current dividends as opposed to capital gains.
- There is an indication that a somewhat higher investor valuation may be placed on dividends than on retained earnings.
- To the extent that this conclusion is valid, it is possible that management might be able, at least in some measure, to increase stock prices by raising dividends. However, the opposite may be true in growth companies where management might be able to increase share price by greater retention of earnings which could not be revealed by this study.

Main finding of this paper are:

- Dividend payment is more important as compared to retained earnings in Nepal.
- If the company retains more earnings, the market price of share may decline. In this connection, it may be interesting to conduct a similar study at different points in time to ascertain whether importance of retained earning has increased over a period of time.
- Similarly, an industry wise analysis may also be very rewarding as such study can reveal the degree of importance of dividend or retained earnings in different industries.
- The generalizations that can be made from these findings are limited, as tests were undertaken for few companies (177 observations).
- Moreover, the regression models explained less than half of the total variance in linear equations and exhibited other empirical shortcomings. Nevertheless, the paper offers considerable promise in testing for the

relevance of dividends. In a world of market imperfections, it is useful to view separately the net preference of investors for dividends or for capital gains and the fact that new equity financing is more costly than the retention of earnings (Van Horne and McDonald, 1971).

- As additional years are tested and the number of companies investigated is expanded, greater insight into the effect of dividend policy on value may be gained.

Bhattarai (2005), has published an article on *"Split Shares to Benefit Small Investors"* where he explained that a well performing company reflects the performance in the market price, which is beating up. Those companies whose dividend is higher like Standard Chartered Bank, Nepal Bank Ltd, NABIL Bank have high market price. Although, their market price per share is higher, the investors are willing to purchase their share. But, small investors cannot afford to purchase the share because the prices of these shares are prohibited. Stock split may be a good solution to drop down the price of these shares, which is affordable to small investors.

Aleknevicience, Domeika & Jatkunaite (2006), have published an article on *"The Development of Company Dividend Policy in Respect of Profit Distribution Priorities."*

The aim of the research is to develop a model of company dividend policy selection estimating the priorities of profit distribution. The following goals were established to reach the aim:

- To determine possible profit distribution and dividend policy alternatives;
- To study the relationship between different company priorities of profit distribution and dividend policy being formed, developing a model of dividend choice selection;
- To carry out a comparative analysis of company's dividend policy models;

- To estimate the relevance of the developed model to companies.

Major findings:

1. Dividend policy is chosen in respect of whom – shareholders or managers – have a higher impact on the formation of the dividend policy and what consumption – current or future – is preferred by investors:

- The company that gives priorities to investment realization, maintenance of desirable capital structure and financing by external capital is inclined to form the residual dividend policy.
- The company developing dividend policy according to stable and constantly growing dividend model gives priorities to the maintenance of the current dividend reliability, to the guarantee of low uncertainty degree in the development of dividend policy as well as to the stability of dividend growth rate.
- Dividend policy development according to stable dividend payout ratio model is determined by priorities given to profit stability, dividend payout ratio consistency and a high degree of in formativeness in the market on the company's financial situation.
- Low stable dividend and premium payout at the end of the year policy could be called a compromise dividend policy between stable dividends and their stable payout ratio.

2. Having conducted a comparative analysis of dividend policy types according to the investors preferences in respect of profit consumption it was estimated that:

- Each company, before choosing some model of dividend policy development, initially should foresee the aims. Nevertheless, dividend payout development models should be formed combining both the company and investors' expectations.
- Both residual dividend policy and low stable dividend with premium payout at the end of the year policy provide investors, who give priority to the future consumption (capital gain).

- Stable (constantly growing) dividend and stable dividend payout ratio policy propose the mentioned way to gain profit only after all expected dividends are paid.
- Stable (constantly growing) dividend and low stable dividend with premium at the end of the year models feature dividend pay stability and regularity. They are characteristic of definiteness and reliability. The policy of constant dividend payout ratio and residual dividend policy have a highest uncertainty.

3. Conducted theoretical and empirical research shows that it is advisable to choose residual dividend policy for the companies only in the earliest stages of their existence when there is a high degree of investment activity. If the company's profit and cash flow range, it is most advisable to choose low stable dividend with premium payout at the end of the year policy meanwhile stable dividend ratio payout policy could be selected by companies that have a stable profit, as when the latter ranges the paid dividend proportion changes. Stable and constantly growing dividend policy is more corresponding to the interests of owners who give priority to dividends. This policy could be chosen by the companies that do not have favorable investment possibilities but are certain that in the long run they will earn stable profit.

Tsuji (2010), has published a study report on *"What Are The Determinants Of Dividend Policy? The Case of The Japanese Electrical Appliances Industry"*.
This paper explored the determinants of dividend initiations and continuations from the perspectives of catering theory and the signaling hypothesis in the Japanese electrical appliances industry. We found interesting new evidence as follows:

- First, with regard to the dividend initiations and continuations of Japanese electrical appliances industry firms, the dividend premium is not a determinant. This means that firms in the electrical appliances industry in Japan do not behave as predicted by catering theory.

- Instead, in contrast to the US case, regarding dividend initiations, value-weighted dividend yields, value-weighted nonpayers' size, and value-weighted after-tax earnings-to-total-asset ratios are the determinants of one-year-ahead dividend initiations in Japanese electrical appliances industry firms. These are new results obtained by extending the study of BW [2].
- From the cross-sectional viewpoint, we generally support the relationship between corporate earnings and dividend payments; however, from the aggregate time-series viewpoint, we find that corporate earnings tend to decrease in the year following dividend payments by Japanese electrical appliances industry firms; this means a rejection of the signaling hypothesis.

As above, the new evidence derived in this paper contributes to the important issue of dividend policy in corporate finance. Future related academic studies using large Japanese datasets will be valuable. These studies may lead to stronger and more comprehensive conclusions, and this is our future task.

2.4 Review of Thesis

These are few studies made in context of Nepal with regards to dividend and stock prices, because of information lack of experts, the studies is limited in this regards. Even though, some studies are made which are going to be reviewed here.

Gautam (1998), has conducted a study on *"Comparative Study on Dividend policy on Grind lays Bank Ltd. Nepal Indosuez Bank Ltd. and Nepal Arab Bank Ltd."* He took the data of three joint venture banks from 1992 through 1997.
This was a comparative study. The objectives of his study are:

- To identify the type of dividend followed by the banks.
- To examine the impact of dividend on share price.
- To identify the relationship between DPS and other financial indicators.

- To known the uniformity among DPS, EPS and DPR of the three simple commercial banks.

Major finding of the study are as follow:

- Average earning per share and dividend per share of all concerned banks are satisfactory.
- Analysis indicates the largest fluctuations in earning per share and dividend per share. No banks exhibit constant dividend payout ratio.
- No commercial banks seen to be guided by cleanly defined dividend strategy in spite of the good earnings and potentials.
- Shares of the financial institution are actively traded and market prices are increasing.
- Correlation between DPS and EPS of all sample banks is fairly positive. But it is fairly safe to say that the relationship is not significant.
- Theoretically, issue of bonus share has equal impact on EPS, MPS, and DPS. But in case of these sample banks, a significant variation in the degree of impact is observed.

Rajbhandari (2001), has conducted a study on *"Comparatives Study Between Banks and Insurance Companies."* This study takes in to consideration data of only five years from 1994 / 95 to 1998 / 99. Six companies are taken as sample. The objectives of her study are:

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

She found that:

- There is no consistency in dividend payment is found in all sample institutions i.e. NGBL, NIBL, NABIL and EIC which seems to be paying average DPS Rs. 20 every year.
- None of the six sample institution has as clearly defined and appropriate dividend policy.
- The institutions don't seem to follow the optimal dividend policy of paying regular dividend as per the shareholder's expectation and interest.

Thapa (2003), has conducted a study on *"Dividend Policy and Practices, a Comparative Study Between Banks and Insurance Companies in Nepal."* The data are collected from 1996/97 to 2000/01 of Bank (NIBL), Insurance companies (United Insurance Company, Everest Insurance Company and Premier Insurance Company). The objectives of his study are;

- To study the current practices of dividend policy in joint venture commercial banks and insurance companies.
- To examine the relationship between dividend and mark price of the stock.
- To analyze the relationship of financial indicators eg. DPS, EPS, DPR and P/E ratio.
- To analyze the relationship between dividend policy decision of banks and insurance companies. The analysis is done on the basis of different financial tools, simple regression and correlation analysis.

He found that:

- Among the major decision of finance, then majority of respond and give the first importance in investing decision, second in financing and finally give least importance for dividend decision.
- With respect to factors affecting dividend policy of banks and insurance companies of Nepal, most of the respond and give first priority to

current earning, second priority to liquidity and-last priority to past dividend.

- Not a fixed and single policy is being adopted by the banks and insurance companies.
- Majority of the company paid the cash dividend.

Shrestha (2004**),** has conducted a study on *"Dividend Policy and its Impact on Stock Price, an Empirical Analysis on Joint Venture Banks of Nepal"*. The data are collected for the year 1996/1997 to 2000/2001. The objectives of which are as under:

- To examine and evaluate the dividend policy and its impact on stock price of joint venture banks of Nepal.
- To study dividend procedure followed by the joint venture banks in the contest of Nepal.
- To find out the relationship of dividend with EPS, MPS, P/E ratio, D/P ratio of sample firm.

He found that:

- There is not any consistency in dividend policy in the sample banks.
- The MPS is affected by the financial position and the dividend paid by the bank. In this regard, the MPS of the sample banks is seen if be fluctuated.
- Most of the Nepalese banks from the very past have not profit planning and investment strategy which was unbalanced the whole position of the banks.
- All the D/P ratio of the sample banks in many years are found more than the popular practice.

Guragain (2005), has conducted a study on *"A Study of Dividend and its Impact on Stock Price of Nepalese Selected Commercial Banks."* The data are collected from the year 1995 to 2003. The main objectives of study are:

- To analyze the impact of dividend in bank's stock price.

- To find out the relationship of dividend with earning and market price of share observing their history over periods along with their degrees and significance.
- To provide effective suggestions based on the conclusion.

He found that:

- There is high degree positive relationship between DPS and EPS in most of the banks as they are statically significant also,
- Relationship between MPS and DPS is found to be low degree positive in most of the banks but these are statistically insignificant.
- Level of consistency in dividend policy of the banks is very low.
- There is higher role of earning per share to change the dividend per share in most of the banks.

Dongol (2006), has conducted a study on *"Impact of Dividend Policy on Market price of Stock."* The main objectives of his study are:

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

He found that:

- EPS of all the sample banks are fluctuating from year to year.
- None of the sample firms have exactly increasing or decreasing trend of MPS through out the study period.
- The concern about maintaining or increasing the stock price 0 level also influences the dividend policy of the firm and hence that may make impact upon market price of stock.

Budhathoki (2006), carried on a study on *"The study of Dividend Policy of The Commercial Banks in Nepal on May 2006."* The main objectives of the study were;

- To highlight the dividend practices of Commercial Banks.
- To compare the dividend policy followed by different commercial banks chosen.
- To provide the sample banks with some fruitful suggestion that can be implemented easily and possible guideline to overcome various issues and gaps based on the findings of the analysis.

Some of the major findings of this study are:

- The average earning per share (EPS) of the banks under study shows a positive result. But the coefficient of variation indicates that there is no consistency of EPS.
- The average dividend per share (DPS) shows that there is no regularity in dividend payment.
- The analysis of DPR shows that the Dividend Payout Ratio (DPR) of the banks is not stable.
- The average market price shows that there is quite high level of fluctuation.

Pandey (2008), has conducted a study on *"Pricing and Yield Behavior of Equity Shares in Nepal: A case of Commercial Banks"* on March 2008. The main objectives of the study are:

- To establish relationship between market prices of commercial bank's equity shares and their yield behavior in Nepal.
- To see how effective is yield in determining the market price of the securities?
- If yield is not the sole determining factor then what could be other factors, which could affect the market prices of securities in Nepal.
- To identify problems of securities market in Nepal and suggest measures to correct the existing problems.

Main findings of this research are:

- Market prices of the equity shares are overvalued when compared to the earnings per share, which is the primary indicator of the financial status of the concerned financial institution. This was mainly due to ignorance and improper access to financial health of the company.
- The result of simple regression analysis between the market price and yield indicators reflected that net worth per share explained the best of the market prices compared to other indicators. Dividend per share and earnings per share were equally explanatory, whereas dividend payout ratio was not a good indicator of stock pricing. The result showed that market price corresponds to the earning per share at a greater extent and then to dividend per share and then to earnings per share.

Bhattarai (2009), has conducted a study on *"Dividend Practices of Commercial Banks and Its Impact on Stock Price."* The major objectives of the study are to examine the impact of dividend policy on stock price in Nepalese commercial banks. The specific objectives of the study are as follows:

- To analyze the impact of dividend on stock price.
- To identify the determinants of the dividend per share (DPS) and market price of stock. (MPS)
- To analyze the relationship of DPS with EPS and MPS.
- To compare dividend practices of selected commercial banks.

Major Findings:

- The SCBL has the highest mean EPS among the banks.
- The SCBL has the highest mean DPS among selected banks whereas it is lowest in DCBL and Consistency in DPS is also highest in Standard Chartered Bank than that of other banks.
- EBL is retaining more its earning and it might be the consequences of the higher growth opportunities.
- The SCBL has the highest mean MPS among the selected banks and DCBL has the lowest. MPS trend of all banks is in increasing trend over

the sample period. Consistency in MPS in HBL is higher than that of others.

- The average P/E ratio of DCBL is highest among the bank and lowest one is SCBL.
- Correlation matrix of selected banks shows that correlation between DPS and MPS is positive and highly significant in NBL and EBL. It implies that there is a positive impact of dividend on market price of stock.
- From the test of hypothesis, it is found that null hypothesis of no significant difference of EPS, DPS, MPS, BVPS and DPR among selected banks are rejected and whereas the null hypothesis of no significant difference of P/E ratio is accepted.

Shrestha (2010), has conducted a study *on "Dividend Policy & Practices in Commercial Banks."* The specific objectives are follows:

- To highlight the dividend practices of the banks.
- To reflect (identify) the relationship between dividend per share and other financial indicators such as earning per share, net profits, net worth and market price of stock.
- To know if there is any uniformity among dividend per share, earning per share and dividend payout ratio of the two commercial banks sampled.
- To examine whether or not dividend influences the liquidity position and share prices of sample banks.
- To provide a possible guideline and a package of suggestion on the basis of finding and analysis to overcome various issues and gaps.

Main findings of this study:

- Earning per share analysis shows that the average earning per share is negative in NBBL.

- At the same time C.V. analysis helps us to conclude that NSBL has relatively more consistent earning per share than that of NBBL and NSBL is able to pay higher average dividend to its shareholders.
- This analysis shows that both banks do not exhibit constant divided payout ratio.
- NSBL has lower price earning ratio but has comparatively more consistency of price earning ratio.
- Average market value per share to book value per share of NSBL is greater with relatively less consistency than that of NBBL. This shows that there is greater chance of higher capital gain to the shareholders of NSBL.
- The correlation between divided per share with net profit, average stock price,
- Net worth, investment, current ratio is insignificant in NSBL.

Research Gap:-

The above studies are performed by different researchers. Their weakness and drawbacks are also mentioned there with. This study will analyze the price determination of common stock in secondary market of Nepal. Usually the price of common stock in primary market is par value but in secondary market may be any price i.e. more, less or equal to par value. In this study, it is tried to carry out the distinct from other previous studies in terms of sample size, nature of the sample firms and methodology used. The study has covered six commercial banks and latest nine year's data have been analyzed with due consideration of EPS, DPS, DPR, MPS and NW. Taking in mind for more elaborate and extensive analysis. In order to assess the impact of dividend on market price of share, available information from concerned banks were reviewed and analyzed. Regression analysis has been done assuming market price of share as dependent variable and other of variable like DPS, EPS & D/P ratio as independent variable. At last testing of hypothesis has been done. So, it has been believed that this study will be different from earlier one.

CHAPTER – III
RESEARCH METHODOLOGY

3.1 Introduction

A brief introduction of this study has been already presented in the first chapter. Besides review of literature with possible reviews of ideas, theories and research finding have also been presented in second chapter. Now it is important to have choice of research methodology that helps to make analysis meaningful. So this chapter deals with the methodology for the study. “Research Methodology refers to the various sequential steps to be adopted by the researcher in studying a problem with certain object in view.” In this study research methodology has been paid due attention to achieve the objectives of the study.

3.2 Research design

The research design is the specification of methods and procedure for acquiring the information needed to structure of solve problems. In another word it is the conceptual framework within which research is conducted. The analytical as well as descriptive research designs have therefore been included in the present study. "For the analytical purpose the annual reports, financial and other relevant materials of the companies will be studied. The research design refers to the conceptual structure within which the research is conducted." *(Kothari; 1978:22).* It 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.

3.3 Nature and sources of Data

In this study, data have been gathered especially form the secondary sources, the data of different financial variables related with dividend of sample banks have basically form the “Trading report” both published by Nepal stock exchange Ltd., supplementary data and information are also collected from the annual reports been collected published by concerned government and on-governmental organization. Besides the data have been acquired from the various sources like,

Annual reports

Https/www.nepalstock.com

Nepal Stock Exchange Limited

Security Board of Nepal

Concerned bank’s web site

3.4 Procedure of Data collection

The relevant data have been collected from the concerned bank's website and Nepal Stock Exchange and other website. Similarly the required data have also been acquired from various articles, Social Science Baha Library Batisputali, Central Library and Shanker Dev campus Library. Besides above, the indirect and informal talks to concerned field have also been made.

3.5 Data processing technique

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

3.6 Population and sample selection

It is not possible to study all commercial banks of Nepal, so sampling has been done. Among them following banks are taken as follows:-

- Standard Charter Bank Nepal Limited.
- Nabil Bank Limited.
- Nepal Investment Bank Limited.
- Himalayan Bank Limited.
- Bank Of Kathmandu Limited
- Everest Bank Limited.

3.7 Method of Analysis

The data has been analyzed according to the pattern of data available. Wide verities of methodology have been applied according to the reliability and consistency of data. Before using the analytical tools to compare result, the data containing in the financial statements have been grouped and rearranged so as to make comparison easy. For the data of eight years were taken as sample from 2000/01-2008/09. The data were analyzed in ways as: -

- Financially
- Statistically

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

3.7.1 Financial Tools:-

3.7.1.1 Earning per share (EPS):- EPS is ratio of net profit after taxes to number of equity shares outstanding. It measures return on each equity shareholders. It reveals whether the banks earning power per share basis have changed over the period.

$$\text{Earning Per Share (EPS)} = \frac{\text{Earning available to common Shareholders}}{\text{No. of common Stock Outstanding}}$$

3.7.1.2 Dividend per share (DPS):- DPS is defined as the ratio of net profit after interest and preference. Dividend paid to ordinary share holders to number of common stock outstanding.

$$\text{Divided Per Share (DPS)} = \frac{\text{Total amt. of div. paid to ordinary shareholder}}{\text{No. of ordinary shareholders Outstanding}}$$

3.7.1.3 Dividend payout ratio (D/P Ratio):- It is the percentage of profit i.e. distributed as dividend. This ratio indicates what percentage of profit is distributed as dividend and what percentage of profit is retained for the growth of the company. It is calculated as follows:

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

3.7.1.4 Dividend yield ratio:- This ratio indicates the relationship between dividend per share and market value per share. It is calculated as:

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

3.7.1.5 Price Earning Ratio (P/E Ratio)/Earning multiplier:-

Price earning ratio is also called the earnings multiplier. Price earning ratio is the ratio between market price per share and earning per share. In other word, this represents the amount which investors are willing to pay for each rupee of the firms earnings. The P/E ratio measures investor's expectation and market appraisal of the performance of the firm. The higher P/E ratio implies the high market share price of a stock given the earning per share and the greater confidence of investor in the firm's future. This ratio is computed by dividing market price per share by earning per share of the firm. Thus,

- $\text{P/E ratio/ Earning multiplier} = \frac{\text{Market Price Per Share}}{\text{Earning Per Share}}$

3.7.1.6 Earning yield (EY):-

Earning yield is the percentage of earning per share to market price per share in the stock market. In other words, it is a financial ratio relating to earning per share to the market price per share at a particular time. It measures the earning in relation to market value of share. It gives some idea of how much an investor is earning for his money. The sharer with higher earning yield is worth buying. It is calculated as:-

• Earning Yield (EY) = $\frac{\text{Earning Per Share}}{\text{Market Price Per Share}}$

3.7.1.7 Dividend Yield (DY):-

Dividend Yield is a percentage of dividends per share on market price per share. It measures the dividend in relation to market value of share. So, dividend yield is the dividend received by the investors as a percentage of market prices per share in the stock market. This ratio highly influences the market price per share because a small change in dividend per share can bring effective change in the market value of the share. The share with higher dividend yields is worth buying. Thus, the price of higher dividend yields increase sharply in the market. Dividend has importance guidance to commit funds for the buying of shares in the secondary market. This ratio is calculated by dividing dividend per share by market price of the share. Thus,

• Dividend Yield (DY) = $\frac{\text{Dividend Per Share}}{\text{Market Price Per Share}}$

3.7.2 Statistical Tools:-

Statistics (as used in sense of data) are numerical statement of facts capable of analysis and interpretation and the science of statistics is a study of the principles and method used in collection, presentation analysis and interpretation of numerical data in any sphere of inquiry. In the present study following statistical tools have been used to draw one meaningful conclusion.

3.7.2.1 Mean or Average ($\overline{X}$)

An average is value which represents a group of values. It shows the characteristics of the whole group. Generally the average value lies somewhere in between the two extremes, i.e. the largest and the smallest items. It is also known as simple average. Calculated as flowing:-

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

Or, $\overline{X} = \frac{\Sigma X}{N}$

Where,

ΣX =Sum of the sizes of the items

N=Number of items.

3.7.2.2 Standard deviation (σ)

Standard deviation measures scatter, spread and provides idea of homogeneity or heterogeneity of the distribution. Out of various methods of studying dispersions such as; range, quartile deviation, mean deviation; standard deviation and variance are the most popular method. Standard deviation is denoted by a Greek letter 'σ " (Sigma) and is calculated as follows:

$$\text{S.D. } (\sigma) = \sqrt{\frac{\Sigma(X - \overline{X})}{N}}$$

Where,

$\overline{X}$ =Mean

X = Variable

N = Number of items in the series

σ = Standard Deviation

3.7.2.3 Coefficient of variation (C.V)

It is the measurement of the relative dispersion by Karl person. It is used to compare the variability of two or more series. The series with higher coefficient of variation is said to be more variable, less consistent, less uniform, less stable and less homogeneous. On the contrary the series with less coefficient of variation is said to be less variable, more consistent, more uniform more stable and more homogenous. It is denoted by C.V and is obtained as

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

Where,

S.D or σ =Standard Deviation

$\overline{X}$ = Mean

3.7.2.4 Regression analysis

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

Dividend per share on Earning per share

The model: $Y= a + b X$

Where,

Y = Dividend price per share

a = Regression constant

b = Regression coefficient

X = Earnings per share

This model enables us to know whether EPS is the influencing factor of dividend per share or not.

Market price per share on DPS

Y= a + b X

Where,

Y = Market price per share

a = Regression constant

b = Regression coefficient

X = Dividend per share.

This analysis tests the dependency of market price per share on dividend per share.

Net Worth on DPS

Y= a + b X

Where,

Y = Net Worth

a = Regression constant

b = Regression coefficient

X = Dividend per share.

This analysis tests the dependency of Net worth DPS.

Market price per share on Dividend payout Ratio:

Y= a + b X

Where,

Y = Market price per share

a = Regression constant

b = Regression coefficient

X = Dividend Payout ratio

This model has been constructed to examine the relationship between market price per share and Dividend payout ratio.

Market Price per share on Earning per Share

Y=a +bX

Where, Y=Market Price per Share

a=Regression Constants

b=Regression coefficient

x=Earning per share

This model has been constructed to examine the relationship between market price per share and Dividend payout ratio.

3.7.2.5 Coefficient of correlation

Correlation analysis is the statistical tools that we can use to describe the degree to which one variable is linearly related to another. The correlation analysis is technique used to measure closeness of the relationship between the variables. It helps us in determining degree of relationship between two or more variables. It describes not only the magnitude of correlation but also its direction. The coefficient of correlation is number which indicates to what extent two variables are related with each other and to what extent variations in one leads to variation to the other.

The value of coefficient of correlation always lies between -1 to +1. A value of -1 indicates a perfect negative relationship between the variables and a value of +1 indicates a perfect positive relationship. A value of zero indicates that there is no relationship between the variables.

Thus in this study the degree of relationship between dividend per share and other relevant financial indicators such as Market price per share, Earning per share,

Dividend payout ratio etc is measured by the correlation coefficient. The correlation coefficient can be calculated as:

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

Where,

r = Correlation Coefficient

N = Number of items in the series

X,Y = Variables

Under this study the correlation between the following variables are analyzed.

DPS and EPS

DPS and MPS

DPS and NW

DPR and MPS

EPS and MPS

3.7.2.6 Coefficient of Determination (R^2)

The coefficient of determination is the primary way we can measure the extend, or strength of association that exists between two variables. It is the measure of degree of linear association between variables one of which happen to be independent and other being dependent variable. It measures the percentage total variation in dependent variable explained by independent variables. The coefficient of determination value can be ranging from zero to one. If regression line is perfect estimator, R2 is zero when there is no correlation. In this study coefficient of determination is calculated to know the degree of correlation of dividend per share with earning per share, net profit, market price per share and net worth. It is calculated by the following formula.

$R^2 = (R)^2$

Where,

R^2 = Coefficient of Determination.

R = Correlation Coefficient.

3.7.2.7 Regression constant (a)

The regression constant (a) which is the intercept of the model represents the average level of dependent variable when independent variable has a value of zero. In other words it indicates the mean or average effect on dependent variable if all the variables omitted from the model. This term has partial meaning only if a zero value for the independent variable is possible.

3.7.2.8 Regression coefficient (b)

The regression coefficient (b) is a parameter which indicates the marginal relationship between independent variable values of dependent variable holding constant effect of all other independent variables in the regression model. The coefficient specifies a part of change in the dependent variable regarding part of change in the independent variables.

3.7.2.9 Probable Error [PE(r)]

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

P. E (r) = 0. 6745 x S.E(r)

Where;

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

r = correlation coefficient between X and Y

S.E(r) = Standard error of correlation coefficient

- If the value of r is less than the probable error i.e. r < P.E (r). There is no significant relation between X and Y.
- If the value of r is more than 6 times the probable error i.e. r > 6 P.E (r). There is most significant correlation between X and Y.
- If (r) > P.E(r) but less than 6 P.E.(r) then nothing concluded, whether the relationship is significant or not.

3.7.2.10 Standard Error of Estimate (SEE)

Standard error of estimate measures the dispersion about an average line for measurement of accuracy in estimated line. It is used to predict better fit of regression line. Smaller SEE is better to estimate and vice-versa. By the help of SEE, it is possible to ascertain how well and representative to regression line is as description of the average relationship between two series.

3.7.2.11 Trend Analysis

Trend analysis of ratios indicates the direction of change over a period of time. It informs about expected future returns, future achievement of the bank, future credit worthiness of bank; financial capability of the bank and much other information which would be helpful to concerned parties of bank. In this study, “The method of least square” is selected as a statistical tool for the analysis of selected banks EPS trend.

3.7.2.12 T-statistics

To test the validity of our assumption, “if sample size is less than 30, t-test is used. For applying t-test in the context of small sample, the value of "t" is calculated first and compared with the table value of "t" at a constant level of significance for given degree of freedom" (Kothary, 1994:143). If the calculated value of "t" is greater than tabulated value in certain level of significance and given degree of freedom we conclude that there is significantly different. If the calculated value is less than the tabulated value, we conclude that the different is not significant.

3.7.2.13 Test of hypothesis

The statement of the relationship between two or more variable is called hypothesis. Hypothesis statement should be able to show the relationship between variables. At the same time they should carry clear implications for testing the stated relations. The research on thesis strongly holds the hypothesis criteria. In this research work, it has been tried to find whether the independent variables have statistically significant relationship with dependent variable or not. The test is based on the pooled average data of nine years of the sample banks.

CHAPTER – IV

DATA PRESENTATION AND ANALYSIS

Presentation and analysis of data is the major part of this research study. Using the various financial variables and statistical tools discussed in "Research methodology" we analyze the data to achieve out objectives of the study.

4.1 Presentation of Financial Variables:-

4.1.1 Earning Per Share (EPS)

Normally, the performance and achievement of business organization are measured in terms its capacity to generate earnings. Higher earnings shows the higher strength while lower earning shows weaker strength of business organization helps for its growth expansion and diversification EPS is the amount of earning of the share invested in the company, better position is seen in stock market. The earning per share of the banks under study is tabulated as follows:-

Table 1

Analysis of Earnings Per Share

Banks / Year	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	126.88	59.26	33.17	93.56	27.97	31.56
2001/02	141.13	55.25	33.59	60.26	2.00	32.91
2002/03	149.30	84.66	39.56	49.45	17.72	29.90
2003/04	143.55	92.61	51.70	49.05	27.50	45.58
2004/05	143.14	105.49	39.50	47.91	30.10	54.20
2005/06	175.84	129.21	59.35	59.24	43.67	62.80
2006/07	167.37	137.08	62.57	60.66	43.50	78.40
2007/08	131.92	108.31	57.87	62.74	59.94	91.82
2008/09	109.99	106.76	37.42	61.90	54.68	99.99
Total	1289.12	878.63	414.73	544.77	307.08	527.16
Mean	143.23	97.62	46.08	60.59	34.12	58.57
Std. Dev.	18.82	26.40	11.06	12.96	17.21	25.01
C.V.	13.13%	27.04%	24.01%	21.42%	50.45	42.70%

(Source: Annual Report of Commercial banks)

The EPS of Standard Chartered Bank Nepal Ltd. (SCBNL) range between Rs. 175.84 to Rs. 109.99 during the period of the study. In the period, the average EPS or mean is Rs. 143.23. The standard deviation of the EPS under the period of the study is 18.82. The Coefficient of Variation (C.V.) of this bank is 13.13% on EPS. It indicates that there is 13.13% fluctuation in EPS among the given 9 year's data.

During the period & the study we came to answer that the EPS range of NABIL Bank is EPS ranged NABIL Bank is between Rs. 137.08 to Rs. 55.25. The mean of this EPS is Rs. 97.62. The standard deviation is 26.40 and the coefficient of variation is 27.04% which indicates that there is 27.04% fluctuation is 27.04% which indicates that there is 27.04% fluctuation in EPS among 9 years.

The range of EPS of Nepal Investment Bank Ltd. (NIBL) during the period of study is between Rs. 62.57% to Rs. 33.17. The mean is Rs. 46.08 standard deviation is 11.26 and coefficient of variation is 23.92% which indicates that there is 24.01% variation in EPS among the give 9 years EPS.

The EPS range of Himalayan Bank Ltd. (HBL) during the period off study is between Rs. 93.56 to Rs. 47.91. The mean, standard deviation and coefficient of variation is Rs. 60.59, 12.96 and 21.43%. The C.V. 21.43% shows that there is 21.42% shows that there is 21.42% variation is EPS among the given 8 years EPS.

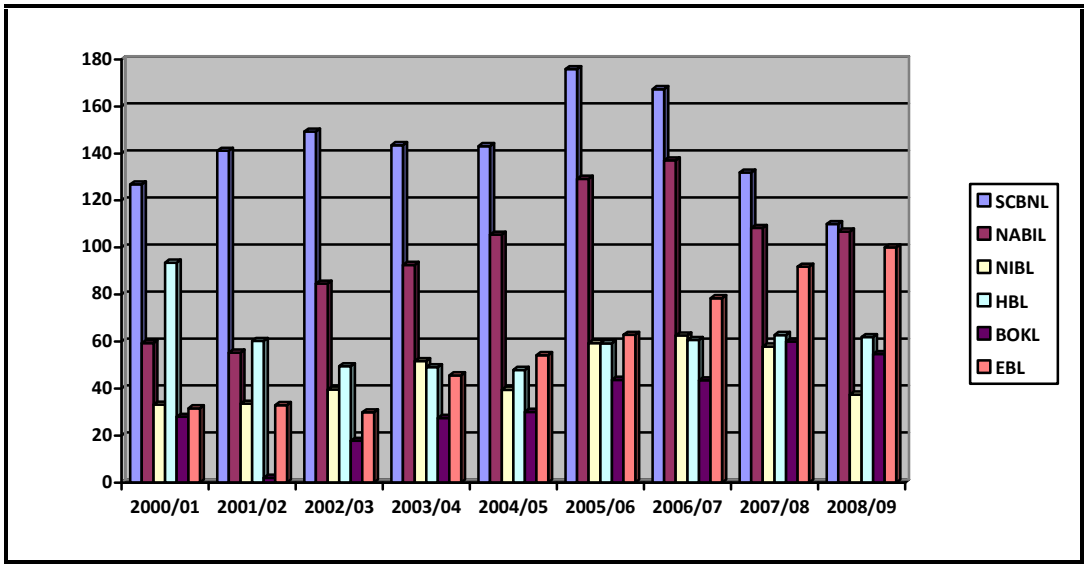
The EPS of Bank of Kathmandu Ltd. (BOKL) range between Rs. 59.9 to Rs. 2 during the period of the study. In the period the mean or average EPS is Rs. 34.52 standard deviation is 17.25 and coefficient of variation is 50.45%. It indicates the there is 50.45% variation in EPS during 9 years EPS.

During the period of study the range of EPS of Everest Bank Ltd. (EBL) is between Rs. 99.99 to Rs. 29.90. The mean of EPS is Rs. 58.57 the standard deviation of EPS is 25.01 and coefficient of variation is 42.70% which shows that there is 40.26% variation in EPS among the given 8 years EPS.

Finally, EPS of commercial banks in Nepal seems positive. The average EPS of SCBNL is the highest where average EPS of BOKL of SCBNL is the highest where average EPS of BOKL is lowest during the period of study. Similarly the standard deviation of NABIL Bank is the highest where NIBL Bank is the highest where NIBL is lowest standard deviation. Looking on the CV, the BOKL has highest i.e. 50.45% and the SCBNL has lowest 13.13%. In the comparison the SCBNL has the most consistent EPS among all the sample banks and the BOKL has the most inconsistent EPS among the all sample banks.

Figure 1

Analysis of Earnings Per Share



4.1.2 Dividend Per Share (DPS)

Dividend Per Share indicates the proportion of earning distributed to owner (Share holder) on per share basis. Generally the higher DPS creates positive attitude, among the shareholder towards the company, which accordingly helps

to increase towards the company, which accordingly helps to increase the market value of shares. The dividend per shares of the banks under study is stated in the table below:-

Table 2

Analysis of Dividend Per Share (DPS)

Banks / Year	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	100	40	0	27.5	0	0
2001/02	100	30	0	25	10	20
2002/03	110	50	20	132	5	20
2003/04	110	65	15	0	10	20
2004/05	120	70	12.5	11.58	15	0
2005/06	130	85	20	30	18	25
2006/07	80	100	5	15	20	10
2007/08	80	60	7.50	25	2.11	20
2008/09	50	35	20	12	7.37	30
Total	880	535	100	147.40	87.48	145
Mean	97.77	59.44	11.11	16.37	9.72	16.11
Std. Dev.	22.98	22.04	7.82	11.33	6.151	9.93
C.V.	23.51%	37.08%	70.45%	69.26%	67.06%	61.68%

(Source: Annual Report of Commercial banks)

The mean, standard deviation and coefficient of variation of Standard Chartered Bank Nepal Ltd. (SCBNL) during the period of study are 47.77, 22.98 and 23.51% respectively. Where C.V. 23.51% shows the variation in DPS during the study. The highest DPS is 130 and lowest DPS is Rs. 50.

Similarly the average DPS of NABIL Bank Ltd. is Rs. 59.44. Highest DPS is Rs. 100 and lowest DPS is Rs. 30. Its Standard deviation and coefficient of variation is 22.04 and 37.08% respectively. The C.V. 37.08% indicates that there 37.08% variation or fluctuation in DPS during the period of study.

The range of DPS is Rs. 20 to Rs. 0 of Nepal Investment Bank Limited (NIBL) during the period of study. The average, standard deviation and coefficient of variation of DPS during the period of study are Rs. 11.11, 7.82 and 70.45 respectively where C.V. 70.45% fluctuation in DPS during the period of study of Nepal Investment Bank Limited.

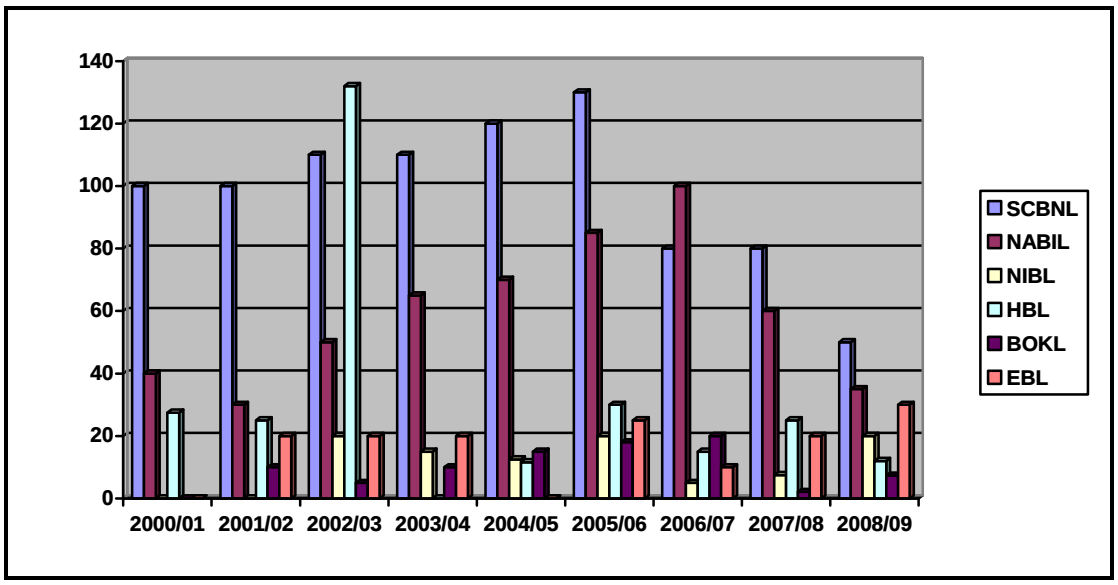
During the period of study, the Himalayan Bank Ltd. has range of DPS between Rs. 30 to Rs. 50. The average or mean DPS is Rs. 16.37 standard deviation is 11.33% and coefficient of variation is 69.26% which indicates that there is 69.26% variation in DPS during 9 years period of study.

DPS range during the period of study of Bank of Kathmandu Ltd. is between Rs. 20 to Rs. 0. The mean is Rs. 9.72 The Standard Deviation is 6.15 and coefficient of variation is 67.06% which shows that theres is 67.06% fluctuation on DPS during 9 yrs period of study.

The range of DPS of Everest Bank Ltd. (EBL) is between Rs. 30 to Rs. 0. Similarly the mean, standard deviation and coefficient of variation of Everest Bank Ltd. are Rs. 18.11, 9.93 and 61.68% respectively where C.V. is 61.68%, indicates that there is 61.68% variation in DPS during the period of study.

Figure 2

Analysis of Dividend Per Share



4.1.3 Dividend Percent (DP)

Dividend percent is the ratio of DPS to the paid up price per share. It is measured in percentage. The dividend percentage during the period of study is presented in the table below.

Table 3

Analysis of Dividend Percent

Banks / Year	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	100	40	0	27.5	0	0
2001/02	100	30	0	25	10	20
2002/03	110	50	20	132	5	20
2003/04	110	65	15	0	10	20
2004/05	120	70	12.5	11.58	15	0
2005/06	130	85	20	30	18	25

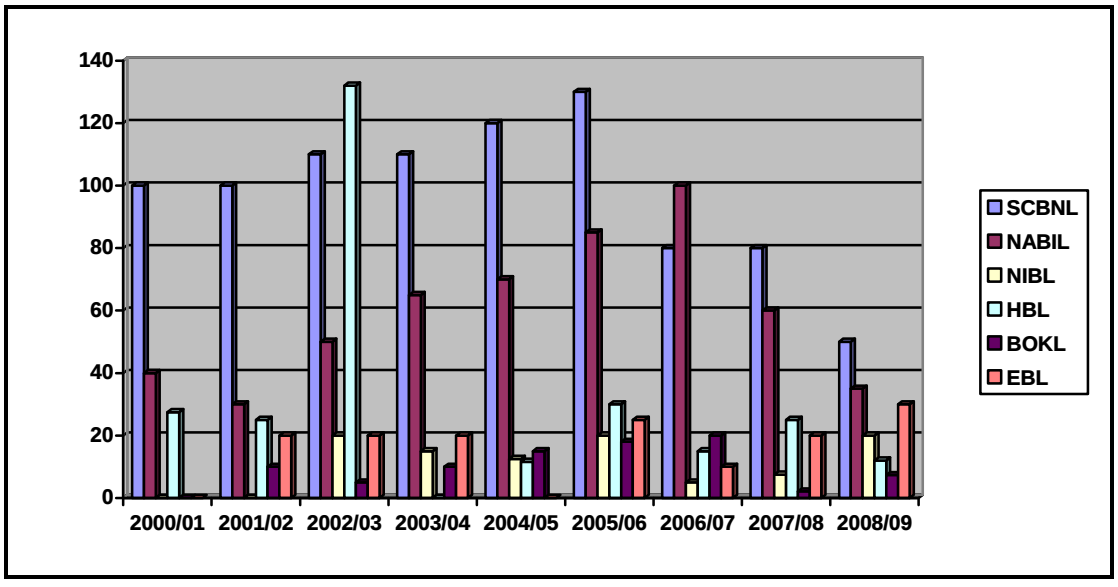
2006/07	80	100	5	15	20	10
2007/08	80	60	7.50	25	2.11	20
2008/09	50	35	20	12	7.37	30
Total	880	535	100	147.40	87.48	145
Mean	97.77	59.44	11.11	16.37	9.72	16.11
Std. Dev.	22.98	22.04	7.82	11.33	6.151	9.93
C.V.	23.51%	37.08%	70.45%	69.26%	67.06%	61.68%

(Source: Annual Report of Commercial banks)

All the banks under study have the same paid up price of Rs. 100 per share but the DPS is different from the above data. SCBNL pays the highest dividend on the face data. SCBNL pays the highest dividend on the fae value of the share and BOKL and NIBL has lowest C.V. which shows the most consistency in Dividend percent among the all given banks.

Figure 3

Analysis of Dividend Percent



4.1.4 Dividend Payout Ratio (DPR)

This ratio shows the amount of dividend as percentage of earning available for equity share. It depends upon earnings of organization. Greater the earnings,

more ability to pay dividend. The DPR of the banks under the study are stated in the table as follows.

Table 4

Analysis of dividend payout ratio

Banks / Year	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	78.81	67.50	0	29.39	0	0
2001/02	70.86	54.30	0	41.48	500	60.77
2002/03	73.68	59.06	50.56	2.67	28.22	66.89
2003/04	76.63	70.19	29.01	0	36.36	43.88
2004/05	83.83	66.36	31.64	24.17	49.83	0
2005/06	73.93	65.78	33.70	50.64	41.22	46.12
2006/07	47.80	72.95	8.00	24.72	45.98	12.75
2007/08	60.64	55.40	12.96	39.84	3.52	21.78
2008/09	45.45	32.78	53.44	19.38	13.47	30
Total	611.63	544.32	219.31	232.29	718.60	282.19
Mean	67.95	60.48	24.36	25.81	79.84	31.35
Std. Dev.	12.85	8.78	19.08	16.08	149.53	23.35
C.V.	18.92%	14.53%	78.34%	62.18%	187.28%	74.49%

(Source: Annual Report of Commercial banks)

The average DPR of standard Chartered Bank Nepal Ltd. (SCBNL) is 67.95%. It means that SCBNL generally pays67.95% of its total earning as dividend to its shareholders. The standard deviation of DPR is 12.85 and coefficient of variation is 18.92% which indicates that there is about 18.92% fluctuation in DPR of the banks over the year.

Average DPR of NABIL Bank is 60.48% which shows that generally, NABIL bank pays 60.48% of its earning as dividend to its shareholders. The standard deviation of this bank is 8.78 and coefficient of variation is 14.53% it indicates that there is 14.53% variation in DPR over the period of study.

Nepal Investment Bank Ltd. (NIBL) has an average DPR of 24.36% indicates that this bank pay dividend to its shareholder from its earning generally. The standard deviation and coefficient of variation are 17.08 and 78.34%

respectively. The coefficient of variation 78.34% indicates that there is 78.34% variation in DPR over the period of study.

An average DPR of Himalayan Bank Ltd. (HBL) is 25.81% which indicates that HBL pays 25.81% of its earning as dividend to its shareholder generally. The standard deviation of HBL is 16.08 and coefficient of variation is 62.18%. It indicates that there 62.18% variation in DPR over the period of study.

Bank of Kathmandu Ltd. has an average DPR is 79.84% which indicates that 79.84% of its earning pays as dividend to its shareholders. The standard deviation of this bank is 149.53 and the coefficient of variation in DPR. among all the banks which is not good for the bank.

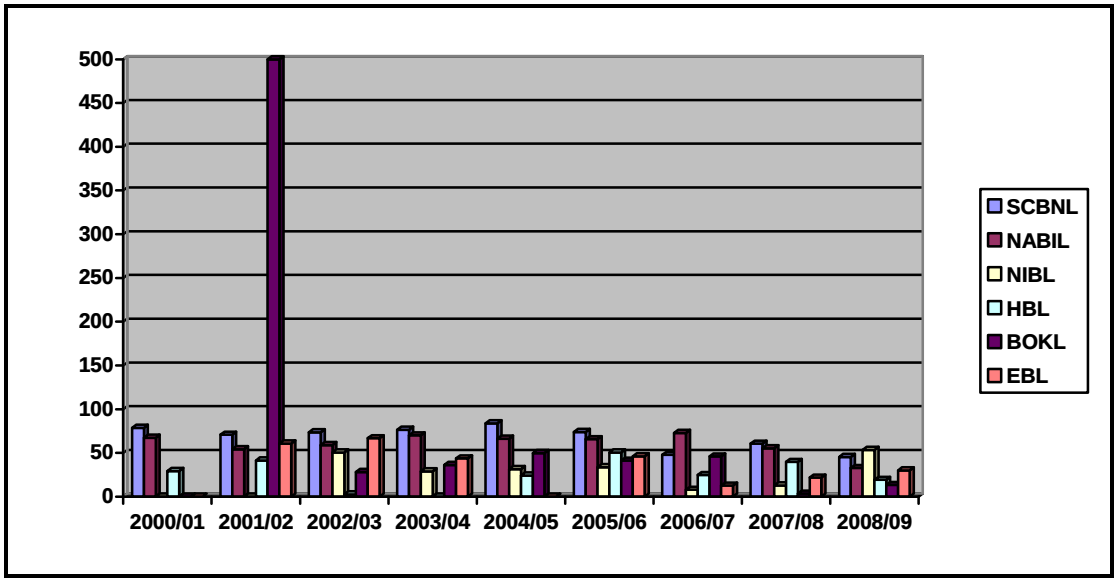
Everest Bank Ltd. has an average DPR is 31.35% which shows that 31.35% of its earning pay dividend to its shareholders. The standard deviation and coefficient of variation are 23.75 and 74.49% respectively. The C.V. 74.49% shows that there is 74.49% variation on DPR over the period of study.

Finally the above calculation shows that BOKL has the highest average DPR i.e. 79.84% but in standard deviation and coefficient of variation are very high so this bank has not satisfied to its share holders because there is risk. The standard chartered bank has second highest average DPR i.e. 67.95% which is good.

The lowest average DPR of Nepal Investment Bank is 24.36 BOKL has highest standard deviation i.e. 149.93 where the NABIL bank has lowest Standard Deviation i.e. 107.28%. Similarly, the BOKL has higher C.V. i..e 187.28% and NABIL bank has lowest C.V. i.e. 14.53% indicates that there is consistency.

Figure 4

Analysis of dividend payout ratio



4.1.5 Market Price Per Share (MPPS)

MPPS is the price of share on which shares are traded in secondary market. Thus, the price is fixed in the stock market on the basis of demand and supply position for a specified share. Higher MPPS is more desirable. The average market price shares banks under study are presented in table as follows.

Table 5

Analysis of Market Price Per Share

Banks / Year	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	2144	1500	1150	1500	850	750
2001/02	1550	735	760	1000	254	430
2002/03	1640	740	795	836	198	445
2003/04	1745	1000	940	840	295	680
2004/05	2345	1505	800	920	430	870

2005/06	3775	2240	1260	1100	850	1379
2006/07	5900	5050	1729	1740	1375	2430
2007/08	6830	5275	2450	1980	2350	3138
2008/09	6010	4899	1388	1760	1825	2455
Total	31939	22944	11272	11676	8427	12571
Mean	3548.78	2549.33	1252.44	1297.33	936.33	1396.78
Std. Dev.	2019.84	1839.59	521.13	422.79	720.64	957.35
C.V.	56.91%	72.15%	41.60%	32.58%	76.96%	68.53%

(Source: Annual Report of Commercial banks)

The average of closing MPPS of Standard Chartered Bank Ltd. (SCBNL) during the period of study is Rs. 3548.78 with a standard deviation of 2019.84 and coefficient of variation of 56.91% which shows the variation on MPPS during the study of the period.

During the period of study, NABIL Bank Ltd. had an average closing MPPS of Rs. 19549.33 with a standard deviation of 1839.59 and a coefficient of variation of 72.15% which shows the fluctuation on MPPS during the period of study.

The average of closing MPPS of Nepal Investment Bank Ltd. (NIBL) during the period of Study is Rs. 1252.44 with a Standard deviation of 521.13 and coefficient of variation of 41.60%. The C.V. 41.60% indicate that there is 41.60% variation on MPPS during the period of study.

Himalayan Bank Ltd. (HBL) has an average of closing MPPS is Rs. 1297.33 during the period of study. The standard deviation of this bank is 422.79 and coefficient of variation is 32.58% which indicates the fluctuation on MPPS during the period of study.

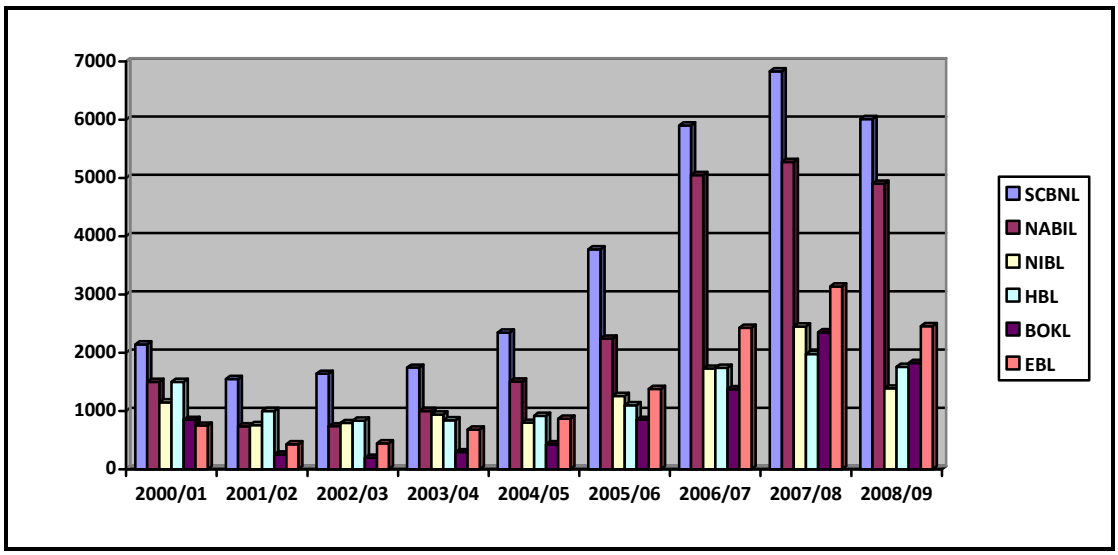
Bank of Kathmandu Ltd. (BOKL) has an average of closing MPPS is Rs. 936.33 during the period of study. The standard deviation is 720.64 and coefficient of variation is 76.96% which shows that there is 76.96% variation on MPPS during the period of study.

The average of closing MPPS of Everest Bank Ltd. (EBL), during the period of Study is Rs. 1396.78 with a Standard deviation of 957.35 and a coefficient of variation of 68.53% which indicates the variation on MPPS during the period of study.

Finally Standard Chartered Bank Nepal Ltd. (SCBNL) has the highest overage MPPS during the period of study i.e. Rs. 3548.78 and Bank of Kathmandu has the lowest average of closing MPPS i.e. 936.33 over the period of study. Nepal investment bank Ltd. (NIBL) has the lowest standard deviation and Standard Chartered Bank Nepal Limited has the highest Standard deviation. Similarly, Himalayan Bank Ltd. has the lowest coefficient of variation and Bank of Kathmandu Ltd. (BOKL) has the highest coefficient of variation. Lowest C.V. shows the consistency in market price over the period and the highest C.V. shows the inconsistency in the market price over the period.

Figure 5

Analysis of Market Price Per Share



4.1.6 Price Earning Ratio (P/E Ratio)

Price earning ratio is the ratio between market price per share and earning per share. It is also called earning multiplier. The price earning ratio of the banks under study is presented in the table below:-

Table 6

Analysis of Price Earning Ratio

Banks / Year	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	16.89	25.31	34.67	16.03	31.10	20.60
2001/02	11.16	12.67	22.62	16.59	12.70	12.31
2002/03	10.98	8.74	20.10	16.90	11.17	14.88
2003/04	12.16	10.80	18.18	17.12	7.20	14.92
2004/05	16.38	14.27	20.25	19.20	14.29	16.00
2005/06	21.47	17.34	21.23	18.57	19.46	22.00
2006/07	35.25	36.84	27.63	28.69	31.61	31.10
2007/08	51.77	48.70	42.33	31.56	39.21	34.10
2008/09	54.64	45.89	37.10	28.43	33.37	24.55
Total	230.70	220.56	244.111	193.09	200.11	190.36
Mean	25.63	24.51	27.12	21.45	22.23	21.15
Std. Dev.	16.33	14.63	8.29	5.86	10.99	7.15
C.V.	63.71%	59.68%	30.56%	27.31%	49.21%	33.80%

(Source: Annual Report of Commercial banks)

The average P/E Ratio of SCBNL, during the period of study is 25.63. The standard deviation of P/E Ratio is 16.33 and coefficient of variation is 63.71% indicates the fluctuation on P/E Ratio over the period of Study.

During the period of Study Nepal Investment Bank Ltd (NIBL) has an average of P/E Ratio is 27.12. The standard deviation of P/E Ratio is 8.29 and the coefficient of variation of P/E Ratio is 30.36% indicates that there 30.56% fluctuation in P/E Ratio during the period of study.

An average of P/E Ratio, standard deviation and coefficient of variation of Himalayan Bank Ltd., during the period of study are 21.45, 5.86 and 27.31% respectively. The C.V. 27.37 show that the nature of fluctuating of P/E Ratio over the period of study.

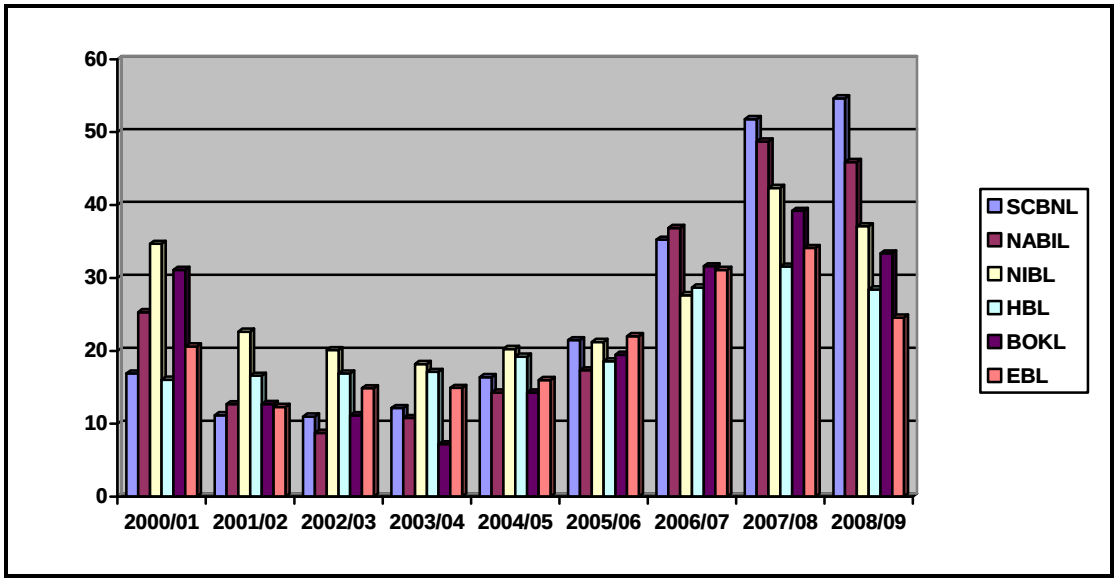
During the period of study, Bank of Kathmandu Ltd. (BOKL) has an average of P/E Ratio Standard deviation one coefficient of variation are 22.23 10.99 and 49.21% respectively. The C.V. 49.21% indicates the nature of fluctuating of P/E Ratio during the period of study.

The average P/E Ratio of Everest Bank Ltd. (EBL), during the period of study is 21.15. The standard deviation of P/E Ratio is 7.15 and the coefficient of variation of P/E Ratio is 33.80 which indicates that there is 33.80 % variation in P/E Ratio during the period of study.

Finally, NIBL has the highest average P/E i.e. 27.12 and HBL has the lowest average P/E Ratio i.e. 21.15. The highest standard deviation is 16.53 of SCBNL has the highest C.V. i.e. 63.71 which shows the in consistency among the all banks and NIBL has the lowest C.V. i.e. 30.56% which shows that there is consistency in P/E Ratio among all selected banks.

Figure 6

Analysis of Price Earning Ratio



4.1.7 Earning Yield (EY)

Earning Yield is the percentage of earning per share to market price per share in the secondary market. It gives an idea of how much an investor might get for his money. The share with higher earning yield is worth buying. Earning yield of the banks under the study is presented in the table below:-

Table 7

Analysis of Earning Yield

Banks / Year	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	5.91	3.95	2.88	6.23	3.29	4.20
2001/02	9.10	7.52	4.42	6.02	0.78	7.65
2002/03	9.10	11.44	4.97	5.91	8.94	6.72
2003/04	8.22	9.26	5.50	5.83	9.32	6.70
2004/05	6.10	7.00	4.93	5.20	7.00	6.23
2005/06	4.65	5.76	4.71	5.38	5.13	4.55
2006/07	2.83	2.71	3.62	3.46	3.16	3.22
2007/08	1.93	2.05	2.36	3.16	2.55	2.93
2008/09	1.83	2.17	2.69	3.51	2.99	4.07
Total	49.67	51.86	36.08	44.72	43.16	46.27
Mean	5.52	5.76	4.01	4.97	4.80	5.14
Std. Dev.	2.74	3.13	1.08	1.16	2.82	1.61
C.V.	49.63%	54.34%	26.93%	23.34%	58.75%	31.32%

(Source: Annual Report of Commercial banks)

The average EY standard deviation and coefficient and coefficient of variation of Standard Chartered Bank Nepal Ltd. during the study of period 5.52, 2.74 and 49.63% respectively. The C.V. 49.63% shows that there is 49.63% variation in EY during the period of study NABIL bank has an average EY is 5.76. The standard deviation is 3.13 and the coefficient of variation is 54.34% during the period of study. The coefficient of variation shows the fluctuating nature of Earning E yield.

During the period of study Nepal Investment Bank Ltd. has an average earning yield is 4.01, standard deviation is 1.08 and coefficient of variation is 26.93% which indicate that there 26.93% variation in earning yield during the period of study.

Himalayan Bank Ltd. (HBL) has an average earning yield, standard devotion and coefficient of variation are 4.97, 1.16 and 23.34% respectively. The coefficient of variation 23.34% indicates that there is 23.34% fluctuation in earning yield over the period of study.

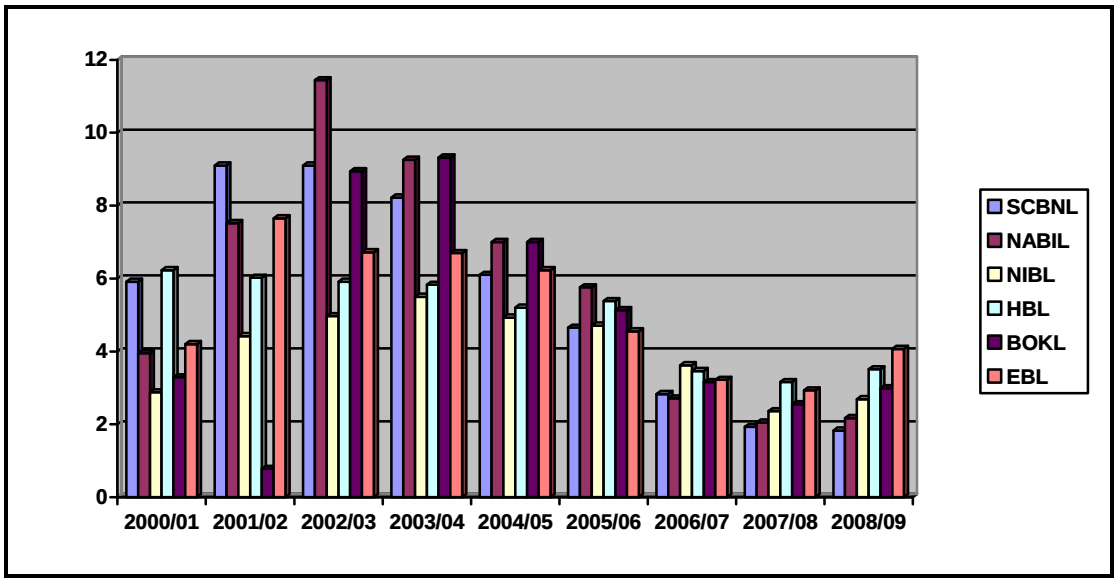
The average of earning yield of Bank of Kathmandu Ltd. is 4.80 during the period of study. The standard deviation is 2.82 and coefficient of variation is 58.16% the period of the study. The c.v. 58.75% shows that there is 58.75% variation in earning yield during the period of study.

During the period of study an average earning yield of Everest Bank Ltd. (EBL) is 5.14. The Standard Deviation earning yield is 1.61 and coefficient of variation of earning yield is 31.32% over the period of study. The C.V. 31.49% shows that there is 31.32% fluctuation in earning yield over the period of study. Finally, NABIL has the highest average earning yield among the selected banks and NIBL has the lowest average earning yield among the all selected banks NABIL has again highest standard deviation i.e. 3.13 which is not good and

NIBL has the lowest standard deviation i.e. 1.08 which is good for the bank. Similarly to test the consistency, the coefficient of variation should apply and HBL has the lowest C.V. i.e. 23.34% which shows the consistency on the earning yield among the all selected banks and BOKL has the highest coefficient of variation i.e. 58.75% which shows the inconsistence on earning yield among the all selected banks.

Figure 7

Analysis of Earning Yield



4.1.8 Dividend Yield (DY)

Dividend yield is the percentage of DPS on MPS. It measures the dividend in relation to market value of share. It is the dividend received by the investors as a percentage of market price per share can bring effective change in the market value of the share. The dividend yields of the banks under study are presented in the table given below:-

Table 8

Analysis of Dividend Yield

Banks / Year	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	4.66	2.67	0	1.83	0	0
2001/02	6.45	4.08	0	2.50	3.93	4.65
2002/03	6.71	6.75	2.52	0.15	2.52	4.49
2003/04	6.30	6.50	1.59	0	3.38	2.94
2004/05	5.11	4.65	1.56	1.25	3.48	0
2005/06	3.44	3.79	1.58	2.72	2.11	1.81
2006/07	1.35	1.98	0.28	0.86	1.45	0.41
2007/08	1.17	1.14	0.30	1.26	0.09	0.63
2008/09	0.83	0.71	1.44	0.68	0.40	1.22
Total	36.02	32.27	9.27	11.25	17.36	16.15
Mean	4.00	3.59	1.03	1.25	1.93	1.79
Std. Dev.	2.25	2.04	0.84	0.90	1.43	1.72
C.V.	56.25%	56.82%	81.55%	72.00%	94.09%	96.08%

(Source: Annual Report of Commercial banks)

The dividend yield of Standard Chartered Bank Nepal Ltd. ranges between 6.71% and 0.83% during the period of study. During the period of study, the average dividend yield is 4.00%. The Standard deviation of dividend yield is 2.25% and the coefficient of variation is 56.25% during the period of study, which indicate that there is 56.25% variation in dividend yield over the period of study.

The ranges of dividend yield are between 2.52% to 0 of Nepal Investment Bank Ltd. during the period of study. The average of dividend yield is 1.03%. The standard deviation of dividend yield is 0.84% over the period of study and the

coefficient of variation of dividend yield is 81.55 over the period of study which shows the fluctuating nature of dividend yield.

The Himalayan Bank Ltd. has an average dividend is 1.25% over the period of study and the dividend yield range is between 2.72% to 0. The standard deviation of the dividend yield is 0.90% and the coefficient of variation is 72.00 during the period of study. The C.V. 72% indicates that there is 72%fluctuation in dividend yield over the period of study.

During the period of study, Bank of Kathmandu Ltd. (BOKL) has an average dividend yield is 1.93% with ranges between 3.93% to 0. The standard deviation of dividend yield is 1.43% and coefficient of variation is 94.09% over the period of study. The C.V. 94.09% show that there is 94.04% variation on dividend yield over the period of study.

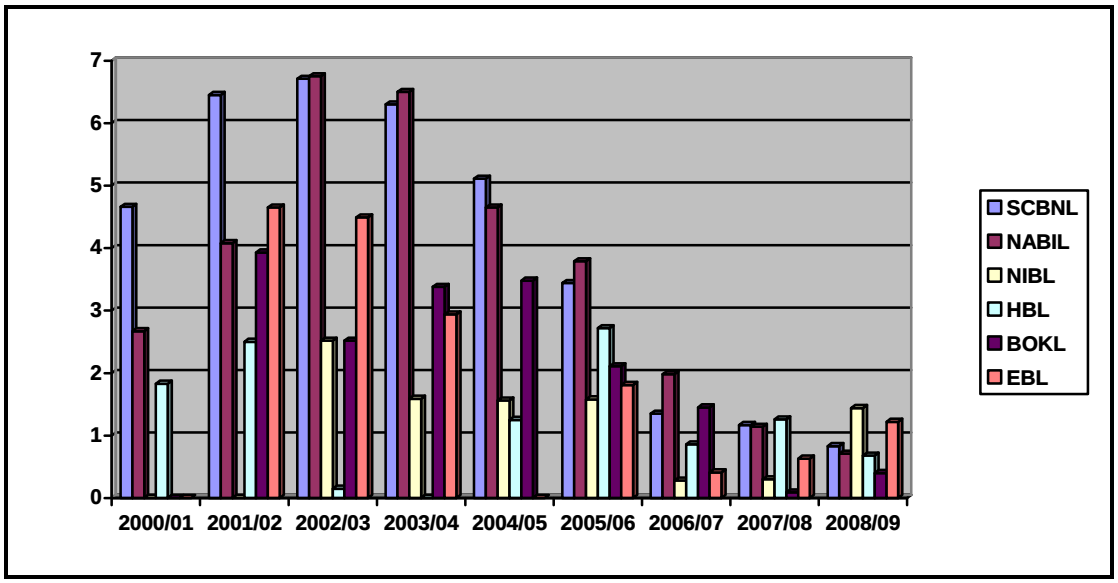
The dividend yield of Everest Bank Ltd. ranges between 4.65% to 0 and the average dividend yield is 1.79% over the period of study. The standard deviation of dividend yield during the period of study is 1.72% and coefficient of variation is 96.08% which indicates the fluctuating nature of dividend yield over the period of study.

Finally, Standard Chartered Nepal Ltd. has the highest average of dividend yield i.e. 4.00% and the Nepal Investment Bank Ltd. has the lowest average of dividend yield. The highest standard deviation is 2.25% of Standard Chartered Bank Nepal Ltd. and the lowest standard deviation is 0.84% of Nepal Investment Bank Ltd. Similarly the highest coefficient of variation is 96.08% of Everest Bank Ltd. and the lowest coefficient of variation 56.25% of Standard Chartered Bank Ltd. The lowest coefficient of variation shows the consistency in dividend yield over the period of study and the highest coefficient of variation shows the consistency in dividend yield over the period of study. Among the all selected bank, SCBNL has the consistency in the

dividend yield and EBL has the inconsistency in the dividend yield during the period of study.

Figure 8

Analysis of Dividend Yield



4.2 Analysis of Statistical Indicators

4.2.1 Sample Correlation and Regression Analysis

Correlation analysis is the statistical tools that we can use to describe the degree to which one variable is linearly related to other variables. Correlation says just degree of relationship between two or more variables. In correlation analysis, only one variable is treated as dependent and one or more variables are treated as independent. Correlation analysis is generally used to describe the degree of relationship between two more variables. In statistics, it is used in order to represent the co-variance between two or more variables. It helps to determine whether high, moderate and low degree of positive or negative correlation.

Using the relationship between a know variable and an unknown variable to estimate the known one is termed as regression analysis. Thus correlation

measures the degree of relationship between the variables while regression analysis shows how the variables are related. Regression and correlation analysis thus determines the nature and the strength of relationship between two variables. The regression analysis either is simple regression or multiple predict the value of the dependent variable through the appropriate regression line. The analysis is known as simple regression analysis. If the analysis is performed by the use of two or more independent variable is known as multiple regression analysis.

Table 9

(I) Simple correlation and regression analysis between EPS and DPS

Banks	a	b	Sb	S.Ee	r	r^2	t - value	S.E.(r)	P.E. (r)	6× P.E. (r)	Relationship	Signi/Ins.
SCBNL	-12.08	0.767	0.359	20.27	0.628	0.395	2.13	0.202	0.136	0.816	Positive	–
NABIL	-8.4	0.695	0.175	13.82	0.833	0.694	3.98	0.102	0.069	0.414	Positive	Significant
NIBL	5.48	0.122	0.264	8.75	0.173	0.03	0.463	0.323	0.218	1.308	Positive	Insignificant
HBL	-14.65	0.512	0.239	9.29	0.632	0.399	2.142	0.2	0.135	0.81	Positive	–
BOKL	9.27	0.0134	0.143	7.39	0.035	0.0013	0.09	0.332	0.224	1.344	Positive	Insignificant
EBL	7.14	0.153	0.138	10.4	0.386	0.1494	1.108	0.283	0.19	1.14	Positive	–

The above table no-9 has contained the different indicators (Appendix- IX) helpful to analyze the simple correlation and regression between EPS and DPS of the observed 6 commercial banks. Where EPS is Independent variable and DPS is the dependent variable. With the help of these indicators, we can come to the following conclusion:-

The regression constant or intercept coefficient (a) of SCBNL is –12.08 which shows that the average DPS would be Rs-12.08 if the EPS were zero. The result shows the slope of the regression line (b) is 0.767 which indicates that positive correlation exists between EPS and DPS of SCBNL. One rupee increase in EPS cause Rs. 0.767 increase in the DPS of the bank. The coefficient of determination (r^2) is 0.395 which indicates that 39.5% of the variation in DPS is affected or determined by the explanatory variables EPS.

The simple correlation coefficient (r) between EPS and DPS of SCBNL. But since r is greater than P.E and less than 6×P.E., so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of NABIL is –8.4, which shows that the average DPS would be Rs –8.4 if the EPS were zero. The result shows the slope of the regression line (b) is 0.695, which indicates that positive correlation exists between EPS and EPS of NABIL. One rupee increase in EPS causes Rs 0.695 increase in the DPS of the bank. The coefficient of determination (r^2) is 0.694, which indicates that 69.4% of the variation in DPS is affected or determined by the explanatory variables EPS. The simple correlation coefficient (r) between EPS and DPS is 0.833 which indicates that there is a high positive relationship between EPS and DPS of NABIL. But since r is greater than 6×P.R.(r) so the relationship between EPS and DPS is significant. The Value of 't'-statistic is greater than 't'-tabulated value. So there is significant at 5% leave of significance.

The regression constant or intercept coefficient (a) of NIBL is 5.48, which shows that the average DPS would be Rs 5.48 if the EPS were zero. The result shows the slope of the regression line (b) is 0.122, which indicates that positive correlation exists between EPS and DPS of NIBL. One rupee increase in EPS causes Rs 0.122 increases in the DPS of the bank. The coefficient of determination (r^2) is 0.03 which indicates that 3% of the variation in DPS is affected or determined by the explanatory variables EPS. The simple correlation coefficient (r) between EPS and DPS is 0.173 which indicates that there is a low positive relationship between EPS and DPS of NIBL. But since r is less than P.E.(r) so the relationship between EPS and DPS is insignificant. The Value of 't'-statistic is less than 't'-tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of HBL is –14.65, which shows that the average DPS would be Rs –14.65 if the EPS were zero. The result shows the slope of the regression line (b) is 0.512, which indicates that positive correlation exists between EPS and DPS of HBL. One rupee increase in EPS causes Rs 0.512 increases in the DPS of the bank. The coefficient of determination (r^2) is 0.399 which indicates that 39.90% of the variation in DPS is affected or determined by the explanatory variables EPS. The simple correlation coefficient (r) between EPS and DPS is 0.632 which indicates that there is a high positive relationship between EPS and DPS of HBL. But since r is greater than P.E and less than 6×P.E, so we concluded nothing out of this data the relationship being significant or insignificant. The Value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of BOKL is 9.27, which shows that the average DPS would be Rs 9.27 if the EPS were zero. The result shows the slope of the regression line (b) is 0.0134, which indicates that positive correlation exists between EPS and DPS of BOKL. One rupee increase in EPS causes Rs 0.0134 increases in the DPS of the bank. The coefficient of determination (r^2) is 0.0013 which indicates that 0.13% of the variation in DPS is affected or determined by the explanatory is 0.035 which indicates that there is a low positive relationship between EPS and DPS is 0.035 which indicates that there is a low positive relationship between EPS and DPS of BOKL. But since r is less than PE(r) so the relationship between EPS and DPS is insignificant. The value of 't'-statistic is less that 't'-tabulated value. So there id insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of EBL is 7.14 which show that the average DPS would be Rs 7.14 if the EPS were zero. The result shows the slope of the regression line (b) is 0.153 which indicates that positive correlation exists between EPS and DPS of EBL one rupee increases in EPS

causes Rs 0.153 increases in the DPS of the bank. The coefficient of determination (r^2) is 0.1494 which indicates that 14.94% of the variation in DPS is affected or determined by the explanatory variables EPS. The simple correlation coefficient (r) between EPS and DPS is 0.386 which indicates that there is a low positive relationship between EPS and DPS of EBL. But since r is greater than P.E (r) and less than 6×P.E(r), so we concluded nothing out this data the relationship is being significant or insignificant. The value 't'-statistic is less than tabulated value . So there is insignificant at 5% level of significance.

Table 10

(II) Simple Correlation and Regression Analysis Between DPS and MPS

Banks	a	b	Sb	S.Ee	r	r^2	t-value	S.E(r)	P.E (r)	6×P.E(r	Relationship	Signi/Ins
SCBNL	9513	-61	23.91	-0.7	0.482	-2.55	0.17	0.116	0.696		Negative	Significant
NABIL	1069	24.9	30.1	1990.8	0.3	0.089	0.82	0.3	0.205	1.2288	Positive	-
NIBL	1358	-9.54	24.9	584.84	-0.1	0.021	-0.38	0.33	0.22	1.3212	Negative	Insignificant
HBL	1027	16.54	12.83	436.61	0.41	0.17	1.289	0.28	0.187	1.1201	Positive	-
BOKL	1134	-20.3	41.07	803.21	-0.2	0.034	-0.49	0.32	0.217	1.3032	Negative	Insignificant
EBL	968.6	26.58	34.99	1043.4	0.28	0.076	0.759	0.31	0.208	1.2462	Positive	-

The above table no-10 has contained the different indicators (Appendix-X) helpful to analyze the simple correlation and regression between DPS and MPS of the observed 6 commercial banks. Where DPS is Independent variable and MPS is the dependent variable. With the help of these indicators, we can come to the following conclusion:-

The regression constant or intercept coefficient (a) of SCBNL is 9513, which shows that the average MPS would be Rs9513 if the DPS were zero. The result shows the slope of the regression line (b) is -61 which indicates that negative correlation exists between DPS and MPS of SCBNL. One rupee increase in DPS causes Rs-61 decreases in the MPS of the bank. The coefficient of

determination (r^2) is 0.482 which indicates that 48.20% of the variation in MPS is affected or determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and MPS is -0.70 which indicates that there is a high negative relationship between DPS and MPS of SCBNL But since r is greater than 6×P.E.(r) so the relationship between DPS and MPS is significant. The value of t-statistics is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept (a) of NABIL is 1069, which dhows that the average MPS would be Rs1069 if the DPS were zero. The result shows the slope of the regression line (b) is 24.10 which indicate that positive correlation exists between DPS and MPS of NABIL. One rupee increase in DPS causes Rs24.10 increases in the MPS of the bank. The coefficient of determination (r^2) is 0.089 which indicates that 8.90% of the variation in MPS is affected of determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and MPS is 0.30 which indicates that there is a low positive relation between DPS and MPS of NABIL. But since r is greater than P.E (r) and less than 6×P.E(r), so we concluded nothing out of this data that the relationship is being significant or insignificant. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of NIBL is 1358, which shows that the average MPS would be Rs1358 if the DPS were zero. The result shows the slope of the regression line (b) is -9.54 which indicates that negative correlation exists between DPS and MPS of NIBL. One rupee increase in DPS causes Rs-9.54 decreases in the MPS of the bank. The coefficient of determination (r^2) is 0.021 which indicates that 2.10% of the variation MPS in is affected or determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and MPS is -0.1 which indicates that there is a low negative relationship between DPS and MPS of NIBL. But since r is less than P.E.(r) so the relationship between EPS and DPS is insignificant.

The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept (a) of HBL is 1027, which dhows that the average MPS would be Rs1027 if the MPS were zero. The result shows the slope of the regression line (b) is 16.54 which indicate that positive correlation exists between DPS and MPS of HBL. One rupee increase in DPS causes Rs16.54 increases in the MPS of the bank. The coefficient of determination (r^2) is 0.17 which indicates that 17% of the variation in MPS is affected of determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and MPS is 0.41 which indicates that there is a moderate positive relation between DPS and MPS of HBL. But since r is greater than P.E and less than 6×P.E, so we concluded nothing out of this data the relationship being significant or insignificant. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of BOKL is 1134, which shows that the average MPS would be Rs1134 if the DPS were zero. The result shows the slope of the regression line (b) is -20.30 which indicates that positive correlation exists between DPS and MPS of BOKL. One rupee increase in DPS causes Rs-20.30 decreases in the MPS of the bank. The coefficient of determination (r^2) is 0.034 which indicates that 3.40% of the variation in MPS is affected or determined by the explanatory variables DPS. The simple correlation coefficient between DPS and MPS is -0.20 which indicates that there is low negative relationship between DPS and MPS of BOKL. But since r is less than P.E.(r) so the relationship between EPS and DPS is insignificant. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept (a) of EBL is 968.6, which shows that the average MPS would be Rs968.6 if the DPS were zero. The result shows the

slope of the regression line (b) is 26.58 which indicate that positive correlation exists between DPS and MPS of EBL. One rupee increase in DPS causes Rs26.58 increases in the MPS of the bank. The coefficient of determination (r^2) is 0.76 which indicates that 76% of the variation MPS in is affected of determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and MPS is 0.28 which indicates that there is a low positive relation between DPS and MPS of EBL But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

Table 11

(III) Simple Correlation and Regression Analysis Between DPS and NW

Banks	a	b	Sb	S.Ee	r	r^2	t-value	S.E(r)	P.E (r)	6×P.E(r	Relationship	Signi/Ins
SCBNL	322.2	0.825	0.888	61.26	0.33	0.11	0.929	0.3	0.2	1.2	Positive	-
NABIL	170.3	2.427	0.58	38.41	0.85	0.714	4.184	0.1	0.064	0.3858	Positive	Significant
NIBL	274.3	-3.61	1.34	31.49	-0.7	0.51	-2.69	0.16	0.11	0.6606	Negative	Significant
HBL	136.6	2.682	5.886	200.22	0.45	0.203	0.456	0.27	0.179	1.0746	Positive	-
BOKL	210.2	-0.75	1.227	23.99	0.22	0.05	-0.61	0.32	0.214	1.281	Positive	-
EBL	204.3	1.815	2.187	65.21	0.3	0.09	0.83	0.3	0.205	1.2282	Positive	-

The above table no-11 has contained the different indicators (Appendix-XI) helpful to analyze the simple correlation and regression between DPS and NW of the observed 6 commercial banks. Where DPS is Independent variable and NW is the dependent variable. With the help of these indicators, we can come to the following conclusion:-

The regression constant or intercept coefficient (a) of SCBNL is 322.2, which shows that the average NW would be Rs 322.2 if the DPS were zero. The result shows the slope of the regression line (b) is 0.825 which indicates that positive correlation exists between DPS and NW of SCBNL. One rupee increase in

DPS causes Rs 0.825 increases in the NW of the bank. The coefficient of determination (r^2) is 0.11 which indicates that 11% of the variation in NW is affected or determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and NW is which indicates that there is law positive relationship between DPS and NW of SCBNL But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept (a) of NABIL is 170.30, which shows that the average NW would be Rs170.30 if the DPS were zero. The result shows the slope of the regression line (b) is 2.427 which indicate that positive correlation exists between DPS and NW of NABIL. One rupee increase in DPS causes Rs2.427 increases in the NW of the bank. The coefficient of determination (r^2) is 0.714 which indicates that 71.4% of the variation in NW is affected of determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and NW is 0.85 which indicates that there is a high positive relation between DPS and NW of NABIL But since r is greater than 6×P.R. (r) so the relationship between DPS and NW is significant. The Value of 't'-statistic is greater than 't'-tabulated value. So there is significant at 5% leave of significance.

The regression constant or intercept coefficient (a) of NIBL is 274.3, which shows that the average NW would be Rs274.3 if the DPS were zero. The result shows the slope of the regression line (b) is -3.61 which indicates that negative correlation exists between DPS and NW of NIBL. One rupee increase in DPS causes Rs-3.61 decreases in the NW of the bank. The coefficient of determination (r^2) is 0.51 which indicates that 51% of the variation in NW is affected or determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and NW is -0.70 which indicates that there is a high negative relationship between DPS and NW of NIBL. But since

r is greater than 6×P.R.(r) so the relationship between DPS and NW is significant. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept (a) of HBL is 136.6, which dhows that the average NW would be Rs136.6 if the DPS were zero. The result shows the slope of the regression line (b) is 2.682 which indicate that positive correlation exists between DPS and NW of HBL. One rupee increase in DPS causes Rs2.682 increases in the NW of the bank. The coefficient of determination (r^2) is 0.203 which indicates that 20.3% of the variation in NW is affected of determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and NW is 0.45 which indicates that there is a moderate positive relation between DPS and NW of HBL. But since r is greater than P.E and less than 6×P.E, so we concluded nothing out of this data the relationship being significant or insignificant. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of BOKL is 210.2, which shows that the average NW would be Rs210.2 if the DPS were zero. The result shows the slope of the regression line (b) is -0.75 which indicates that negative correlation exists between DPS and NW of BOKL. One rupee increase in DPS causes Rs-0.75 decreases in the NW of the bank. The coefficient of determination (r^2) is 0.05 which indicates that 5% of the variation in NW is affected or determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and NW is 0.22 which indicates that there is a low negative relationship between DPS and NW of BOKL. But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept (a) of EBL is 204.3, which dhows that the average NW would be Rs204.3 if the DPS were zero. The result shows the slope of the regression line (b) is 1.815 which indicates that positive correlation exists between DPS and NW of EBL. One rupee increase in DPS causes Rs1.815 increases in the NW of the bank. The coefficient of determination (r^2) is 0.09 which indicates that 9% of the variation in NW is affected of determined by the explanatory variables DPS. The simple correlation coefficient (r) between DPS and NW is 0.30 which indicates that there is a low positive relation between DPS and NW of EBL. The value of t-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

Table 12

(IV) Simple Correlation and Regression Analysis Between DPR and MPS

Banks	a	b	Sb	S.Ee	r	r^2	t-value	S.E.r	P.E (r)	6×P.E.r	Relationship	Signi/Ins
SCBNL	1232.	-129.1	33.85	1306.04	-0.822	0.6758	-3.81	0.1081	0.0729	0.4374	Negative	sig
NABIL	5795.	-53.68	74.51	1964.43	0.336	0.1131	-0.72	0.2956	0.1994	1.1964	Negative	-
NIBL	1398.	-53.68	74.51	1964.43	0.336	0.1131	-0.72	0.2956	0.1994	1.1964	Negative	-
HBL	1081.	8.36	9.44	454.64	0.317	0.1007	0.885	0.2998	0.2022	1.2132	Positive	
BOKL	1085.	-1.87	1.425	639.48	0.389	0.1511	1.312	0.283	0.1909	1.1454	Negative	-
EBL	1858.	-14.66	14.44	1011.89	0.358	0.1279	1.015	0.2907	0.1961	1.01766	Negative	-

The above table no-12 has contained the different indicators (Appendix-XII) helpful to analyze the simple correlation and regression between DPR and MPS of the observed 6 commercial banks. Where DPR is Independent variable and MPS is the dependent variable. With the help of these indicators, we can come to the following conclusion:-

The regression constant or intercept coefficient (a) of SCBNL is 12323.2 Which shows that the average MPS would be Rs 12323.3 if the DPR were zero. The result show the slope of the regression line (b) is -121.1 which indicates that negative correlation exists between DPR and MPS of SCBNL. One rupee

increase in DPR causes Rs -129.1 decrease in the MPS of the bank. The coefficient of determination (r^2) is 0.6758 which indicates that 67.58% of the variation in MPS is affected or determine by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is -0.822 which indicates that there is a very high negative relationship between DPR and MPS of SCBNL. But since r is greater than 6×P.R.(r) so the relationship between DPR and MPS is significant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of NABIL is 5795.89 which show that the average MPS would be Rs5795.89 if the DPR were zero. The result show the slope of the regression line (b) is -53.65 which indicates that negative correlation exists between DPR and MPS of NABIL. One rupee increase in DPR causes Rs -53.68 decrease in the MPS of the bank. The coefficient of determination (r^2) is 0.1131 which indicates that 11.31% of the variation in MPS is affected or determine by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.336 which indicates that there is low positive relationship between DPR and MPS of NABIL. But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance

The regression constant or intercept coefficient (a) of NIBL is 1398.6. which shows that the average MPS would be Rs1398.6 if the DPR were zero. The result show the slope of the regression line (b) is -6 which indicates that negative correlation exists between DPR and MPS of NIBL. One rupee increase in DPR causes Rs -6 decrease in the MPS of the bank. The coefficient of determination (r^2) is 0.1131 which indicate that 11.31% of the variation in MPS is affected or determine by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is -0. 22 which indicates that

there is low negative relationship between DPR and MPS of NIBL But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of HBL is 1081.55, which shows that the average MPS would be Rs1081.55 if the DPR were zero. The result show the slope of the regression line (b) is 8.36 which indicate that negative correlation exists between DPR and MPS of HBL. One rupee increase in DPR causes Rs 8.36 increase in the MPS of the bank. The coefficient of determination (r^2) is 0.1007 which indicates that 10.07% of the variation in MPS is affected or determine by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.317 which indicates that there is low positive relationship between DPR and MPS of HBL. But since r is greater than P.E and less than 6×P.E, so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance

The regression constant or intercept coefficient (a) of BOKL is 1085.55, which shows that the average MPS would be Rs1085.55 if the DPR were zero. The result show the slope of the regression line (b) is -1.87 which indicates that negative correlation exists between DPR and MPS of BOKL. One rupee increase in DPR causes Rs -1.87 decrease in the MPS of the bank. The coefficient of determination (r^2) is 0.1511 which indicates that 15.11% of the variation in MPS is affected or determine by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is -0.389 which indicates that there is low negative relationship between DPR and MPS of BOKL. But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of EBL is 1858.52, which shows that the average MPS would be Rs1858.52 if the DPR were zero. The result show the slope of the regression line (b) is -14.66 which indicates that negative correlation exists between DPR and MPS of EBL. One rupee increase in DPR causes Rs -14.66 decrease in the MPS of the bank. The coefficient of determination (r^2) is 0.1279 which indicates that 12.79% of the variation in MPS is affected or determine by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.358 which indicates that there is low positive relationship between DPR and MPS of EBL But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

Table 13

(V) Simple Correlation and Regression Analysis Between EPS and MPS

Banks	A	b	Sb	S.Ee	r	r2	value	S.E(r)	(r)	6×P.E(r)	Relationship	Signi/Ins
SCBNL	5330.55	-12.44	40.29	2277.92	0.116	0.0134	0.309	0.3289	0.2218	1.3308	Negative	In
NABIL	-1802.5(	44.58	20.23	1602.89	0.64	0.4094	20203	0.1969	0.1328	0.7968	Positive	-
NIBL	-109.68	29.56	13.85	459.93	0.628	0.3941	2.13	0.202	0.1362	0.8172	Positive	-
HBL	323.4	16.09	10.71	416.97	0.494	0.2436	1.5	0.250	0.4701	1.0206	Positive	-
BOKL	-328.83	37.08	7.342	379.22	0.886	0.7847	5.051	0.0718	0.0484	0.2904	Positive	sig
EBL	-715.84	36.07	4.83	362.68	0.943	0.8884	7.46	0.0372	0.0257	0.1542	Positive	sig

The above table no-13 has contained the different indicators (Appendix-XIII) helpful to analyze the simple correlation and regression between EPS and MPS of the observed 6 commercial banks. Where EPS is Independent variable and MPS is the dependent variable. With the help of these indicators, we can come to the following conclusion:-

The regression constant or intercept coefficient (a) of SCBNL is 5330.55 which show that the average MPS would be Rs5330.55 if the EPS were zero. The result show the slope of the regression line (b) is -12.44 which indicates that negative correlation exists between EPS and MPS of SCBNL. One rupee increase in EPS causes Rs -12.44 decrease in the MPS of the bank. The coefficient of determination (r^2) is 0.0134 which indicates that 1.34% of the variation in MPS is affected or determine by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.116 which indicates that there is a low negative relationship between EPS and MPS of SCBNL But since r is less than P.E.(r) so the relationship between EPS and MPS is insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance

The regression constant or intercept coefficient (a) of NABIL is -1802.56, which shows that the average MPS would be Rs-1802.56 if the EPS were zero. The result show the slope of the regression line (b) is 44.58 which indicate that positive correlation exists between EPS and MPS of NABIL. One rupee increase in EPS cause Rs44.58 increase in the MPS of the bank. The coefficient of determination (r^2) is 0.4094 which indicates that 40.94% of the variation in MPS is affected or determine by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.64 which indicates that there is a moderate positive relationship between EPS and MPS of NABIL. But since r is greater than P.E and less than 6×P.E, so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of NIBL is -109.68, which shows that the average MPS would be Rs-109.68 if the EPS were zero. The result show the slope of the regression line (b) is 29.56 which indicate that positive correlation exists between EPS and MPS of NIBL. One rupee increase

in EPS cause Rs29.56 increase in the MPS of the bank. The coefficient of determination (r^2) is 0.3941 which indicates that 39.41% of the variation in MPS is affected or determine by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.628 which indicates that there is a moderate positive relationship between EPS and MPS of NIBL But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance.

The regression constant or intercept coefficient (a) of HBL is 323.4, which shows that the average MPS would be Rs323.4 if the EPS were zero. The result show the slope of the regression line (b) is 16.09 which indicate that positive correlation exists between EPS and MPS of HBL. One rupee increase in EPS cause Rs16.09 increase in the MPS of the bank. The coefficient of determination (r^2) is 0.2436 which indicates that 24.36% of the variation in MPS is affected or determine by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.49 which indicates that there is a moderate positive relationship between DPR and MPS of HBL But since r is greater than P.E and less than 6×P.E , so we concluded nothing out of this data the relationship being significant or insignificant. The value of 't'-statistic is less than tabulated value. So there is insignificant at 5% level of significance

The regression constant or intercept coefficient (a) of BOKL is -328.83, which shows that the average MPS would be Rs-328.83 if the EPS were zero. The result show the slope of the regression line (b) is 37.08 which indicate that positive correlation exists between EPS and MPS of BOKL. One rupee increase in EPS cause Rs37.08 increase in the MPS of the bank. The coefficient of determination (r^2) is 0.7847 which indicates that 78.47% of the variation in MPS is affected or determine by the explanatory variable EPS. The simple

correlation coefficient (r) between EPS and MPS is 0.886 which indicates that there is a high positive relationship between EPS and MPS of BOKL. But since r is greater than 6×P.R.(r) so the relationship between EPS and MPS is significant. The Value of 't'-statistic is greater than 't'-tabulated value. So there is significant at 5% leave of significance

The regression constant or intercept coefficient (a) of EBL is -715.84, which shows that the average MPS would be Rs-715.84 if the EPS were zero. The result show the slope of the regression line (b) is 36.07 which indicate that positive correlation exists between EPS and MPS of EBL. One rupee increase in EPS cause Rs36.07 increase in the MPS of the bank. The coefficient of determination (r^2) is 0.8884 which indicates that 88.84% of the variation in MPS is affected or determine by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.943 which indicates that there is a very high positive relationship between EPS and MPS of EBL. But since r is greater than 6×P.R.(r) so the relationship between EPS and MPS is significant. The Value of 't'-statistic is greater than 't'-tabulated value. So there is significant at 5% leave of significance

4.3 Test of Hypothesis:-

A hypothesis is a conjectural statement relationship between two or more variable. In statistics, hypothesis is means a statistical statement about the values of one or more parameters of the population. The test of hypothesis disclose the fact whether the different between computed statistic and hypothesis parameter in significant. Due to more than two samples F-test is done to find the uniformity of DPS, EPS and MPS.

4.3.1 First Hypothesis Test: To Find The Uniformity of DPS of Banks

Null Hypothesis (H_0): $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$ i.e. there is no significant difference in DPS of SCBNL, NABIL, NIBL, HBL, BOKL and EBL.

Alternative hypothesis (H1): $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$ μ_1i.e. there is significant different in DPS of SCBNL, NABIL, NIBL, HBL, BOKL and FBL

Table 14

One – Way ANOVA Table

Source of Variation	**Sum of Square**	**D.F**	**Mean Sum of Square**	**F- Ratio**
Between Sample	SSC = 58066.79	K-1 6-1=5	MSB = $\frac{SSC}{K-1}$ = $\frac{58066.79}{5}$ = 11613.35	F= MSB,MSW = 11613.35/248.89 = 46.66
Within Sample	SSW = 11947.09	N-K 54-6 = 48	MSW = SSW/N-K = 11947.09/48 = 248.89	
Total	TSS = 70013.88	N-1 54-1 = 53		

Where,

K = No of Samples

N = Total no of Observation

SSC = Sum of Square between Samples

SSW = Sum of Square within Samples

MSW = Mean Sum of Square between Samples

TSS = Total Sum of Square

MSB = Mean Sum of Square between Sample

Now,

Critical value:-

The tabulated value of F at 5% level of significance for 5 and 48 d.f. is 2.31

Decision:-

Since the calculated value of F is 46.66 which is greater than calculated value F i.e. 2.31 therefore null hypothesis (H0) is rejected and alternative hypo this is accepted. It means there is significant different in dividend per share (DPS) of the commercial banks of Nepal. It indicates this there is no uniformity in DPS of commercial banks in Nepal (Appendix- XIV)

4.3.2 Second Hypothesis Test: To Find The Uniformity of EPS of Banks

Null Hypothesis (H_0): $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$ i.e. there is no significant difference in EPS of SCBNL, NABIL, NIBL, HBL, BOKL and EBL.

Alternative hypothesis (H_1): $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$ i.e. there is significant different in EPS of SCBNL, NABIL, NIBL, HBL, BOKL and EBL

Table 15

One – Way ANMOVA Table

Source of Variation	**Sum of Square**	**D.F**	**Mean Sum of Square**	**F- Ratio**
Between Sample	SSC = 73247.22	K-1 6-1=5	MSB = SSC/K-1 = 73247.22/6 = 12207.87	F= MSB/MSW = 12207.87/ 424.40 = 28.76
Within Sample	SSW = 20371.59	N-K 54-6 = 48	MSW = SSW/N-K = 20371.59/48 = 424.40	
Total	TSS = 93618.82	N-1 54-1 = 53		

Where,

K = No of Samples

N = Total no of Observation

SSC = Sum of Square between Samples

SSW = Sum of Square within Samples

MSW = Mean Sum of Square between Samples

TSS = Total Sum of Square

MSB = Mean Sum of Square between Sample

Now,

Critical value:-

The tabulated value of F at 5% level of significance for 5 and 48 d.f. is 2.31

Decision:-

Since the calculated value of F at 5% level of significance for 5 and 48 d.f. is 2.31 which is less than calculated value of F i.e. 28.76, so Alternative Hypothesis (H_1) is accepted. It means there is significant difference in EPS of the commercial banks in Nepal. It also indicates that there is no uniformity in EPS of commercial banks in Nepal (Appendix-XV)

4.3.3 Third Hypothesis Test: To Find The Uniformity of MPS of Banks

Null Hypothesis (H_0): $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$ i.e. there is no significant difference in MPS of SCBNL, NABIL, NIBL, HBL, BOKL and EBL.

Alternative hypothesis (H_1): $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$ i.e. there is significant different in MPS of SCBNL, NABIL, NIBL, HBL, BOKL and FBL

Table 16

One – Way ANMOVA Table

Source of Variation	**Sum of Square**	**D.F**	**Mean Sum of Square**	**F- Ratio**
Between Sample	SSC = 45677368.17	K-1 6-1=5	MSB = SSC/K-1 = 45677368.17/5 = 9135473.63	F= MSB/MSW = 9135473.63/ 1753141.52 = 5.21
Within Sample	SSW = 84150793.33	N-K 54-6 = 48	MSW = SSW/N-K = 84150793.33/48 = 1753141.52	
Total	TSS = 129828161.50	N-1 54-1 = 53		

Where,

K = No of Samples

N = Total no of Observation

SSC = Sum of Square between Samples

SSW = Sum of Square within Samples

MSW = Mean Sum of Square between Samples

TSS = Total Sum of Square

MSB = Mean Sum of Square between Sample

Now,

Critical value:-

The tabulated value of F at 5% level of significance for 5 and 48 d.f. is 2.31

Decision:-

Since the calculated value of F at 5% level of significance for 5 and 48 d.f. is 2.31 which is less than calculated value of F i.e. 5.21. So the Null Hypothesis (H_0) rejected and Alternative Hypothesis (H_1) accepted. It means there is significant difference in MPS of commercial banks in Nepal. It also indicates

that there is no uniformity in MPS of commercial banks in Nepal. (Appendix-XVI)

4.4 Major Findings:-

The major findings of this study are summarized in numerical order:

I The average or mean earning per share (EPS) of the banks under study shows a positive results. But the coefficient of variation (C.V) indicates that there is no consistency of EPS. The C.V range between 50.45% to 13.58%. Among the sample banks under the study, SCBNL has the highest average EPS with lowest fluctuation and BOKL has highest degree of fluctuation and lowest average EPS.

II The average dividend per share (DPS) shoes that there is no regularity in dividend payment. The SCBNL has the highest average DPS and there is regularity in payment of dividend to their share holders SCBNL has also least fluctuation or variation in dividend payment i:e coefficient of variation is very low i:e 23.51%. the C.V of DPS range between 70.45% to 23.51% NIBL has highest fluctuation and lowest average DPS The paid up capital per share is Rs100, the analysis of dividend percent also gives the same result as that of DPS.

III The analysis of dividend payout ratio (DPR) also shows that the DPR of the banks are not stable. Among the banks under study, BOKL has the highest average DPR but the highest fluctuation in DPR. The bank NABIL has least fluctuation on their DPR and also average DPR is satisfactory. In the same way, the fluctuating range is between 187.28% to 14.53%.

IV The average market mice per share (MPS) shows that there is quite high level of fluctuation. SCBNL has highest average MPS than other banks. So, this bank is in good position but average MPS of all commercial banks be considered to be encouraging. BOKL has the lowest average MPS and highest fluctuation. HBL has the lowest fluctuation. The fluctuating range is 83.35% to 33.33%.

V The average price-earning ratio (P/E) of NIBL, among the banks under study is the highest and also all the banks have satisfactory average P/E ratio. NIBL has also lower fluctuation and SCBNL has the highest fluctuation on their P/E ratio. The P/E ratio of remaining banks have satisfactory and quite stable.

VI The average earning yield of banks under study indicates that the earning yield of NABIL is higher than other banks. The average earning yield (EY) of different banks range from 5.76% to 4.01%. NIBL has the lowest EY and BOKL has the highest fluctuation on their EY. Fluctuating range of these banks is 58.75% to 23.34%.

VII The average dividend yield (DY) of the banks under study indicates that the dividend yield is low ranging between 4.00 to 1.00. Among the banks, SCBNL has the highest dividend yield and NIBL has lower DY. Besides the dividend yield is being low, there is high fluctuation in the dividend yield of every banks. Range of the fluctuation is 96.08% to 56.25%. The bank EBL has the highest fluctuation on their dividend yield. Among them SCBNL has the lowest fluctuation on their dividend yield.

VIII The relationship of different financial indicators of SCBNL are positively correlate or negatively correlated, which are summarized below:-

- Correlation between EPS and DPS = positively correlated.
- Correlation between DPS and MPS = negatively correlated.
- Correlation between DPS and NW = positively correlated.
- Correlation between DPR and MPS =negatively correlated.
- Correlation between EPS and MPS = negatively correlated.

IX The relationship of different financial indicators of NABIL is positively correlated or negatively correlated, which are presented below:-

- Correlation between EPS and DPS = positively correlated
- Correlation between DPS and MPS = positively correlated
- Correlation between DPS and NW = positively correlated

- Correlation between DPR and MPS = negatively correlated
- Correlation between EPS and MPS = negatively correlated

X The relationship of different financial indicators of NIBL is positively correlative or negatively correlated, which are summarized below:-

- Correlation between EPS and DPS = positively correlated
- Correlation between DPS and MPS = negatively correlated
- Correlation between DPS and NW = negatively correlated
- Correlation between DPR and MPS = negatively correlated
- Correlation between EPS and MPS = positively correlated

XI The relationship of different financial indicators of HBL is positively correlated or negatively correlated, which are summarized below:-

- Correlation between EPS and DPS = positively correlated
- Correlation between DPS and MPS = positively correlated
- Correlation between DPS and NW = positively correlated
- Correlation between DPR and MPS = positively correlated
- Correlation between EPS and MPS = positively correlated

XII The relationship of different financial indicators of BOKL is summarized below:-

- Correlation between EPS and DPS = positively correlated
- Correlation between DPS and MPS = negatively correlated
- Correlation between DPS and NW = positively correlated
- Correlation between DPR and MPS = negatively correlated
- Correlation between EPS and MPS = positively correlated

XIII The relationship of different financial indicators of EBL is summarized below:-

- Correlation between EPS and DPS = positively correlated
- Correlation between DPS and MPS = positively correlated
- Correlation between DPS and NW = positively correlated
- Correlation between DPR and MPS = negatively correlated
- Correlation between EPS and MPS = positively correlated

XIV The regression analysis between EPS and DPS show that regression coefficient (b) is positive for all the sample banks and the regression constant or intercept coefficient (a) is positive for NIBL, BOKL and EBL and negative for NABIL, SCBNL & HBL.

XV The regression analysis between DPS and MPS shows that the regression coefficient (b) is positive for NABIL, HBL and EBL and negative for SCBNL, NIBL and BOKL and the regression constant or intercept coefficient (a) is positive for all sample banks except NABIL bank.

XVI The regression analysis between DPS and NW shows that the regression coefficient (b) is positive for SCBNL, NABIL, HBL and EBL and negative for NIBL and BOKL. The regression constant intercept coefficient (a) is positive for all sample banks.

XVII The regression analysis between DPR and MPS shows that the regression coefficient (b) is positive for HBL and negative for SCBNL, NABIL, NIBL, BOKL and EBL. The regression constant or intercept coefficient (a) is positive for all the sample banks.

XVIII The regression analysis between EPS and MPS shows that the regression coefficient (b) is positive for all the sample banks except SCBNL and the regression constant for all samples banks except HBL & SCBNL.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary:-

Dividend policy decision is one of the major decisions of financial management. The dividend policy decision affects on the operation and prosperity of the organization because it has the power to influence other two decisions of the organization i.e capital structure decision and investment decision. An investor expects two types of return namely capital gain and dividend by investing in equity capital or ordinary share. So, payment of dividend to share holders is an effective way to attract new investors and maintain present investors. It is important to have clearly defined and effectively managed dividend policy so as to fulfill the share holders expectations and corporate growth.

Paying dividend be taken as important tool to attract new investors. Besides this dividend paying ability reflects the financial positions of the organizations in the market. Due to the division of earnings between dividend payout and retention ratio the market price of the share may also be affected which is also crucial for the organization. So, the funds that as dividend since share holders have investment opportunities else where.

Dividend paying banks have been analyzed to show the implication of dividend policy they have adopted in their market price per share. Now in Nepal, those banks have done profit only these banks paid dividend. Instability of dividend and inconsistent dividend payout ratio is the most applied phenomena of commercial banks in Nepal. But, only the banks promoted by indigenous promoters. However, dividend policy is taking its path slowly in Nepalese environment.

In analyzing the problem with the stated objectives in mind this study has been of more descriptive nature. The study covers the following sample banks (SCBNL, NABIL, NIBL, HBL, BOKL, and EBL) and only for the last nine

years data from 2000/01 to 2008/09. The available secondary data have been analyzed using various financial and statistical tools. So, the reliability of conclusions of this study is determined on the accuracy of secondary data.

The theoretical statement of this study was that dividend decision should depend upon DPS, EPS, MPS and NW of sample banks. Among sample banks dividend payout ratio of BOKL is higher but highest fluctuation so SCBNL has second highest DPR and also lower fluctuation. Similarly, according to EPS, among sample banks SCBNL is more successful than other banks where as BOKL has lowest average EPS. On the basis of P/E ratio, among sample banks, NIBL has highest ratio than other banks but looking other bank's P/E ratio, it seems that they are in satisfactory level. On the basis of DPS, SCBNL is paying higher value of dividend among sample banks and NIBL is paying lower value of dividend among sample banks. On the basis of NW, SCBNL has higher NW than other banks. More over on the basis of market price per share SCBNL has higher MPS than other sample banks.

For the purpose of statistical analysis of the entire sample banks, simple correlation and regression analysis is used to interpret the results. According to regression analysis of DPS on EPS is concerned, coefficient (b) is positive for all banks. The positive coefficient (b) indicates that increases in EPS cause increases DPS. As for coefficient (b) is concerned for relation between DPS and MPS, among banks, it is negative in SCBNL, NIBL, and BOKL where as positive for other banks. The positive coefficient indicates that increases in DPS cause increases MPS and negative coefficient indicates that increases in DPS, cause decrease in MPS. As for the regression analysis of NW on DPS is concerned coefficient (b) is positive for SCBNL, NABIL, HBL and EBL and negative for NIBL and BOKL. The positive coefficient (b) indicates that increases in DPS cause increase in NW and the negative coefficient indicates that increases in DPS causes decrease in NW. As for the repression analysis of MPS on DPR is concerned, among sample banks coefficient (b) is positive for HBL and negative for rest of banks. The positive coefficient (b) indicates that increases un DPR causes increase in MPS and the negative coefficient (b)

indicates that increases in DPS causes decrease in MPS. One rupee increase in DPR causes Rs.129.10 decrease in MPS of SCBNL. As far coefficient (b) is concerned for the relation between EPS and MPS it is positive for all the sample banks except SCBNL. The positive coefficient (b) indicates that increases in EPS causes increase in MPS and the negative coefficient (b) indicates that increases in EPS causes decreases in MPS.

From the analyzing of financial and statistical of all sample banks, the following results are drawn out:-

- There is not fixed consistency between financial variable i.e EPS, MPS, DPS, DPR, NW, P/E ratio, EY and DY.
- Dividend practices of all sample banks are neither stable nor constantly growing. Haphazard way of distribution is growing trend is observed.
- Changes in DPS affect the market price per share differently in different banks.
- The majority of Nepalese firms give first priority to the earnings to make dividend decisions.

The solution of capital market of Nepal is improving day to day as a result the capital market efficient with compare to previous year. Though weak efficient market where share price movement is random this means share price movement does not follow any trends. In such types of market cash dividend will more effective than other forms of dividend. But it is reality that the capital market of Nepal is still immature and now in growing stage.

5.2 Conclusion:-

By the analysis of investment activities it is noticed that only few commercial banks have aggressive investment strategy. With compare to conservative strategy among most of the commercial banks. In spite of this, there is no doubt that commercial banks are the pillars of a nation's economy. Commercial banks are running at profit and providing divided to share holders according to their earnings. They also achieved the trust of common people, which is the great

success of their performance. But yet to be done much more than this for the satisfaction of share holders as well as over all growth of nation's economy. Though the market is efficient as weak form, Nepalese companies should concentrate on paying cash divided rather than bonus or right share. This will attract more individual to invest in capital market as a result capital market will become strong.

5.3 Recommendations:-

Based on the main finding of this study, some recommendations have been made so as to over come some short falls regarding the issue of dividend of the banking sectors.

- There is lack of proper legal provisions regarding the dividend payout. The government as well as the central bank of Nepal, Nepal Rastra Bank should pay their attention in this matter for prescribing certain provision and rules regarding the percentage of earning as payment of divided.
- The commercial banks also should have their long term policy | strategy regarding the adoption of suitable divided policy i.e. either it is adopting a stable divided policy, constant payout ratio or low regular plus extra divided policy.
- There is inconsistency in dividend payment. The dividend is neither static nor growing. This may misconception about the organization regarding is financial position. Due to high degree of risk and uncertainly, the market price per share may be adversely affected. So the commercial banks should follow either static or growing dividend payment policy.
- Issue of stock dividend decreases market value per share and earning per share. But, issue of cash dividend increases market value per share and earning per share. So, due to this reasons common shareholders should be given a choice whether they prefer stock

dividend or cash dividend. Therefore, all the commercial banks are suggested to take care regarding the interest of shareholders.

- All the commercial banks should conduct the seminar or workshop for shareholder experience at least twice in year. Private consultancy firms, exert in financial activities and top executives from all the commercial banks should be the key participation for seminar to identify where the problem lie in their efficient operation. Only then there will be the solution of the problems regarding the financial performance of the commercial banks which is helpful for generating more profit as well as more dividends to their shareholders.
- While making dividend decision, a minor mistake may lead the bank to serious crisis. Due to this reason it is advised to adopt optimum dividend decision based on the following criteria.
    - Optimum retention for excellent expansion and modernization of bank.
    - Optimum dividend so as to maximize shareholders wealth through increase in market price per share i.e. net present value of shareholders.
    - Stable or consistency in the dividend payment.

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APPENDICES

Appendix-I						
EPS						
B/Y	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	126.88	59.26	33.17	93.56	27.97	31.56
2001/02	141.13	55.25	33.59	60.26	2	32.91
2002/03	149.3	84.66	39.56	49.45	17.72	29.9
2003/04	143.55	92.61	51.7	49.05	27.5	45.58
2004/05	143.14	105.49	39.5	47.91	30.1	54.2
2005/06	175.84	129.21	59.35	59.24	43.67	62.8
2006/07	167.37	137.08	62.57	60.66	43.5	78.4
2007/08	131.92	108.31	57.87	62.74	59.94	91.82
2008/09	109.99	106.76	37.42	61.9	54.68	99.99
Total	1289.12	878.63	414.73	544.77	307.08	527.16
Mean	143.236	97.626	46.081	60.530	34.120	58.573

Appendix-II						
DPS						
B/Y	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	100	40	0	27.5	0	0
2001/02	100	30	0	25	10	20
2002/03	110	50	20	1.32	5	20
2003/04	110	65	15	0	10	20
2004/05	120	70	12.5	11.58	15	0
2005/06	130	85	20	30	18	25
2006/07	80	100	5	15	20	10
2007/08	80	60	7.5	25	2.11	20
2008/09	50	35	20	12	7.37	30
Total	880	535	100	147.4	87.48	145
Mean	97.778	59.444	11.111	16.378	9.720	16.111

Appendix-III						
DPR						
B/Y	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	78.81	67.5	0	29.39	0	0
2001/02	70.86	54.3	0	41.48	500	60.77
2002/03	73.68	59.06	50.56	2.67	28.22	66.89
2003/04	76.63	70.19	29.01	0	36.36	43.88
2004/05	83.83	66.36	31.64	24.17	49.83	0
2005/06	73.93	65.78	33.7	50.64	41.22	46.12
2006/07	47.8	72.95	8	24.72	45.98	12.75
2007/08	60.54	55.4	12.96	39.84	3.52	21.78

2008/09	45.45	32.78	53.44	19.38	13.47	30
Total	611.53	544.32	219.31	232.29	718.6	282.19
Mean	67.948	60.480	24.368	25.810	79.844	31.354

Appendix-IV						
MPS						
B/Y	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	2144	1500	1150	1500	850	750
2001/02	1550	735	760	1000	254	430
2002/03	1640	740	795	836	198	445
2003/04	1745	1000	940	840	295	680
2004/05	2345	1505	800	920	430	870
2005/06	3775	2240	1260	1100	850	1379
2006/07	5900	5050	1729	1740	1375	2430
2007/08	6830	5275	2450	1980	2350	3132
2008/09	6010	4899	1388	1760	1825	2455
Total	31939	22944	11272	11676	8427	12571
Mean	3548.778	2549.333	1252.444	1297.333	936.333	1396.778

Appendix-V						
P/E Ratio						
B/Y	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	16.89	25.31	34.67	16.03	31.10	20.60
2001/02	11.16	12.67	22.62	16.59	12.70	12.31
2002/03	10.98	8.74	20.10	16.90	11.17	14.88
2003/04	12.16	10.80	18.18	17.12	7.20	14.92
2004/05	16.38	14.27	20.25	19.20	14.29	16.00
2005/06	21.47	17.34	21.23	18.57	19.46	22.00
2006/07	35.25	36.84	27.63	28.69	31.61	31.00
2007/08	51.77	48.70	42.33	31.56	39.21	34.10
2008/09	54.64	45.89	37.10	28.43	33.37	24.55
TOTAL	230.70	220.56	244.11	193.09	200.11	190.36
Mean	25.633	24.507	27.123	21.454	22.234	21.151

Appendix-VI						
Earning Yield(EY)= EPS/MPS						
B/Y	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	5.91	3.95	2.88	6.23	3.29	4.20
2001/02	9.10	7.52	4.42	6.02	0.78	7.65

2002/03	9.10	11.44	4.97	5.91	8.94	6.72
2003/04	8.22	9.26	5.50	5.83	9.32	6.70
2004/05	6.10	7.00	4.93	5.20	7.00	6.23
2005/06	4.65	5.76	4.71	5.38	5.13	4.55
2006/07	2.83	2.71	3.62	3.48	3.16	3.22
2007/08	1.93	2.05	2.36	3.16	2.55	2.93
2008/09	1.83	2.17	2.69	3.51	2.99	4.07
Total	49.67	51.86	36.08	44.72	43.16	46.27
Mean	5.52	5.76	4.01	4.97	4.80	5.14

Appendix-VII						
Dividend Yield(DY)=DPS/MPS						
B/Y	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	4.66	2.67	0.00	1.83	0.00	0.00
2001/02	6.45	4.08	0.00	2.50	3.93	4.65
2002/03	6.71	6.75	2.52	0.15	2.52	4.49
2003/04	6.30	6.50	1.59	0.00	3.38	2.94
2004/05	5.11	4.65	1.56	1.25	3.48	0.00
2005/06	3.44	3.79	1.58	2.72	2.11	1.81
2006/07	1.35	1.98	0.28	0.86	1.45	0.41
2007/08	1.17	1.14	0.30	1.26	0.09	0.63
2008/09	0.83	0.71	1.44	0.68	0.40	1.22
Total	36.02	32.27	9.27	11.25	17.36	16.15
Mean	4.00	3.59	1.03	1.25	1.93	1.79

Appendix-VIII						
NW						
B/Y	SCBNL	NABIL	NIBL	HBL	BOKL	EBL
2000/01	327.5	216	275.96	399.421	207.72	173.01
2001/02	363.86	233	307.95	393.34	171.83	241.63
2002/03	403.15	267	216.24	247.81	192.52	150.1
2003/04	399.25	301	246.89	246.93	218.38	171.52
2004/05	422.38	337	200.8	239.59	213.6	219.87
2005/06	468.22	381	239.67	228.72	230.67	217.67
2006/07	512.12	418	234.37	264.74	162.81	292.75
2007/08	401.51	354	223.17	247.95	222.51	321.77
2008/09	327.53	324	162.34	256.52	206.25	313.64
Total	3625.52	2831	2107.39	2525.021	1826.29	2101.96
Mean	402.836	314.556	234.154	280.558	202.921	233.551

Appendix-IX

1. Simple correlation and regression analysis between EPS and DPS.

A. Standard chartered Bank Nepal Limited (SCBNL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	126.88	100	12688	16098.53	10000	267.32
2001/02	141.13	100	14113	19917.67	10000	4.41
2002/03	149.30	110	16423	22290.49	12100	36.84
2003/04	143.55	110	15790.50	20606.60	12100	0.10
2004/05	143.14	120	17176.80	20489.05	14400	0.008
2005/06	175.84	130	22859.20	30919.70	16900	1063.41
2006/07	167.37	80	13389.60	28012.72	6400	582.74
2007/08	131.92	80	10553.60	17402.88	6400	127.91
2008/09	109.99	50	5499.50	12097.80	2500	1104.89
N = 9	Σx = 1289.12	Σy = 880	Σxy = 128493.20	Σx^2 = 187835.44	Σy^2 = 90800	$\Sigma(x-\bar{x})^2$ = 3187.62

Where,

x = Earning Per Share (EPS)

y = Dividend Per Share (DPS)

Now, Mean $(\bar{x}) = \frac{\Sigma x}{n} = \frac{1289.12}{9} = 143.23$

Mean $(\bar{y}) = \frac{\Sigma y}{n} = \frac{880}{9} = 97.77$

Standard deviation $(\sigma) = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{3187.62}{9}} = 18.82$

C.V. $= \frac{\sigma}{\bar{x}} \times 100 = \frac{18.82}{143.23} \times 100\% = 13.13\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 128493.20 - 1289.12 \times 880}{\sqrt{[9 \times 187835.44 - (1289.12)^2]\,[9 \times 90800 - (880)^2]}}$$

$$= \frac{22013.20}{\sqrt{28688.58 \times 42800}}$$

$$= 0.628$$

$r^2 = (r)^2 = (0.628)^2 = 0.395$ i.e. 39.46%

Calculation of standard error of correlation coefficient (S.E. (r))

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.395}{\sqrt{9}} = 0.202$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.202 = 0.136

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (DPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equations we get,

$$b = \frac{N\Sigma XY - \Sigma X\Sigma Y}{N\Sigma X^2 - (\Sigma X)^2} = \frac{9 \times 128493.20 - 1289.12 \times 880}{9 \times 187835.44 - (1289.12)^2}$$

$$= \frac{22013.20}{28688.58} = 0.767$$

$a = \bar{y} - b\bar{x} = 97.77 - 0.767 \times 143.23$

$= -12.08$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{90800 - (-12.08 \times 880) - 0.767 \times 128493.20}{9-2}}$$

$= 20.27$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{20.27}{\sqrt{3187.62}} = 0.359$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{0.767}{0.359} = 2.13$$

B. Nabil Bank Limited (NABIL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	59.26	40	2370.40	3511.74	1600	1471.49
2001/02	55.25	30	1657.50	3052.56	900	1795.21
2002/03	84.66	50	4233.00	7167.31	2500	167.96
2003/04	92.61	65	6019.65	8576.61	4225	25.10
2004/05	105.49	70	7384.30	11128.14	4900	61.93
2005/06	129.21	85	10982.85	16692.64	7225	997.92
2006/07	137.08	100	13708.00	18790.92	10000	1557.09
2007/08	108.31	60	6498.60	11731.05	3600	114.27
2008/09	106.76	35	3736.60	11397.69	1225	83.54
N = 9	Σx = 878.63	Σy = 535	Σxy = 56590.90	Σx^2 = 92048.30	Σy^2 = 36175	$\Sigma(x-\bar{x})^2$ = 6274.51

Where,

x = Earning Per Share (EPS)

y = Dividend Per Share (DPS)

Now, Mean ($\overline{x}$) = $\frac{\Sigma x}{n} = \frac{879.63}{9} = 97.62$

Mean ($\overline{y}$) = $\frac{\Sigma y}{n} = \frac{535}{9} = 59.44$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\overline{x})^2}{N}} = \sqrt{\frac{6274.51}{9}} = 26.40$

C.V. = $\frac{\sigma}{\overline{x}} \times 100 = \frac{26.40}{97.62} \times 100\% = 27.04\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 56590.90 - 878.63 \times 535}{\sqrt{[9 \times 92048.30 - (878.63)^2]\,[9 \times 36175 - (535)^2]}}$$

$$= \frac{39251.05}{\sqrt{56444.02 \times 39350}}$$

$$= 0.833$$

$r^2 = (r)^2 = (0.833)^2 = 0.694$ i.e. 69.36%

Calculation of standard error of correlation coefficient (S.E.(r))

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.694}{\sqrt{9}} = 0.102$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E.(r) = 0.6745 × 0.102 = 0.069

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (DPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

$$b = \frac{N\Sigma XY - \Sigma X\Sigma Y}{N\Sigma X^2 - (\Sigma X)^2} = \frac{9 \times 56590.90 - 878.63 \times 535}{9 \times 92048.30 - (878.63)^2}$$

$$= \frac{39251.05}{56444.02} = 0.695$$

$$a = \bar{y} - b\bar{x} = 59.44 - 0.695 \times 97.62$$

$$= -8.40$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{36175 - (-8.40 \times 535) - 0.695 \times 56590.90}{9-2}}$$

$$= 13.82$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{13.82}{\sqrt{6274.51}} = 0.175$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{0.695}{0.175} = 3.98$$

C. Nepal Investment Bank Limited (NIBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	33.17	0	0	1100.25	0	166.66
2001/02	33.59	0	0	1128.29	0	156.00
2002/03	39.56	20	791.20	1565.00	400	42.51
2003/04	51.70	15	775.50	2672.89	225	31.58
2004/05	39.50	12.50	493.75	1560.25	156.25	43.29
2005/06	59.35	20	1187.00	3522.42	400.00	176.09
2006/07	62.57	5	312.85	3915.00	25.00	271.92
2007/08	57.87	7.50	434.02	3348.93	56.25	139.00
2008/09	37.42	20	748.40	1400.25	400.00	74.99
N = 9	Σx = 414.73	Σy = 100	Σxy = 4742.72	Σx^2 = 20213.28	Σy^2 = 1662.50	$\Sigma(x-\bar{x})^2$ = 1102.04

Where,

x = Earning Per Share (EPS)

y = Dividend Per Share (DPS)

Now, Mean ($\bar{x}$) $= \frac{\Sigma x}{n} = \frac{414.73}{9} = 46.08$

Mean ($\bar{y}$) $= \frac{\Sigma y}{n} = \frac{100}{9} = 11.11$

Standard deviation (σ) $= \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{1102.04}{9}} = 11.06$

C.V. $= \frac{\sigma}{\bar{x}} \times 100 = \frac{11.06}{46.08} \times 100\% = 24.0\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 4742.72 - 414.73 \times 100}{\sqrt{[9 \times 20213.28 - (414.73)^2]\,[9 \times 1662.50 - (100)^2]}}$$

$$= \frac{1211.48}{\sqrt{9918.54 \times 4962.50}}$$

$$= 0.173$$

$r^2 = (r)^2 = (0.173)^2 = 0.030$ i.e. 2.98%

Calculation of standard error of correlation coefficient (S.E.(r))

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.0298}{\sqrt{9}} = 0.323$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.323 = 0.218

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (DPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 4742.72 - 414.73 \times 100}{9 \times 20213.28 - (414.73)^2}$$

$$= \frac{1211.48}{9918.54} = 0.122$$

$a = \bar{y} - b\,\bar{x} = 11.11 - 0.122 \times 46.08$

$= 5.482$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{1662.50 - 5.482 \times 100 - 0.122 \times 4742.72}{9-2}}$$

$$= 8.75$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{8.75}{\sqrt{1102.04}} = 0.264$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{0.122}{0.264}$$

$$= 0.463$$

D. Himalayan Bank Limited (HBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	93.56	27.50	2572.90	8753.47	756.25	1090.98
2001/02	60.26	25.00	1506.50	3631.26	625.00	0.07
2002/03	49.45	1.32	65.27	2445.30	1.74	122.86
2003/04	49.05	0	0	2405.90	0	131.79
2004/05	47.91	11.58	554.79	2295.36	134.09	159.26
2005/06	59.24	30.00	1777.20	3509.37	900.00	1.64
2006/07	60.66	15.00	909.90	3659.63	225.00	0.01
2007/08	42.74	25.00	1568.50	3936.30	625.00	4.88
2008/09	61.90	12.00	742.80	3831.61	144.00	1.87
N = 9	Σx = 544.77	Σy = 147.40	Σxy = 9697.86	Σx^2 = 34488.20	Σy^2 = 3411.08	$\Sigma(x-\bar{x})^2$ = 1513.26

Where,

x = Earning Per Share (EPS)

y = Dividend Per Share (DPS)

Now, Mean ($\overline{x}$) = $\frac{\Sigma x}{n} = \frac{544.77}{9} = 60.53$

Mean ($\overline{y}$) = $\frac{\Sigma y}{n} = \frac{147.40}{9} = 16.37$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\overline{x})^2}{N}} = \sqrt{\frac{1513.26}{9}} = 12.96$

C.V. = $\frac{\sigma}{\overline{x}} \times 100 = \frac{12.96}{60.53} \times 100\% = 21.42\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 9697.86 - 544.77 \times 147.40}{\sqrt{[9 \times 34488.20 - (544.77)^2]\,[9 \times 3411.08 - (147.40)^2]}}$$

$$= \frac{6981.64}{\sqrt{13619.44 \times 8972.96}}$$

$$= 0.632$$

$r^2 = (r)^2 = (0.0.632)^2 = 0.399 = 39.88\%$

Calculation of standard error of correlation coefficient (S.E.(r))

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.3988}{\sqrt{9}} = 0.20$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.20 = 0.315

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (DPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$$\Sigma y = Na + b\,\Sigma x \text{ ……. (ii)}$$

$$\Sigma xy = a\,\Sigma x + bx^2 \text{ ..……. (iii)}$$

By solving these two normal equation we get,

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

$$= \frac{9 \times 9697.86 - 544.77 \times 147.40}{9 \times 34488.20 - (544.77)^2}$$

$$= \frac{6981.64}{13619.44} = 0.512$$

$$a = \bar{y} - b\,\bar{x} = 16.37 - 0.512 \times 60.53$$

$$= -14.65$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{3411.08 (- 14.65 \times 147.40) - 0.122 \times 4742.72}{9-2}}$$

$$= 9.29$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{9.29}{\sqrt{1513.26}} = 0.239$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{0.512}{0.239}$$

$$= 2.142$$

E. Bank of Kathmandu Limited (BOKL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	27.97	0	0	782.32	0	37.82
2001/02	2.00	10	20	4.00	100	1031.62
2002/03	17.72	5	88.60	314.00	25	268.96
2003/04	27.50	10	275.00	756.25	100	43.82
2004/05	30.10	15	451.50	906.01	225	16.16
2005/06	43.67	18	786.06	1907.06	324	91.20
2006/07	43.50	20	870.00	1892.25	400	87.98
2007/08	59.94	2.11	126.47	3592.80	4.45	666.67
2008/09	54.68	7.37	402.99	2989.90	54.31	422.71
N = 9	Σx = 307.08	Σy = 87.48	Σxy = 3020.62	Σx^2 = 13144.59	Σy^2 = 1232.76	$\Sigma(x-\bar{x})^2$ = 2667.01

Where,

x = Earning Per Share (EPS)

y = Dividend Per Share (DPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{307.08}{9} = 34.12$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{87.48}{9} = 9.72$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{2667.01}{9}} = 17.21$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{17.21}{34.12} \times 100\% = 50.45\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 3020.62 - 307.08 \times 87.48}{\sqrt{[9 \times 13144.59 - (307.08)^2]\,[9 \times 1232.76 - (87.48)^2]}}$$

$$= \frac{322.22}{\sqrt{24003.18 \times 3442.08}}$$

$$= 0.035$$

$r^2 = (r)^2 = (0.0.035)^2 = 0.0013 = 0.125\%$

Calculation of standard error of correlation coefficient (S.E.(r))

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.0013}{\sqrt{9}} = 0.332$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.332 = 0.224

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (DPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 3020.62 - 307.08 \times 87.48}{9 \times 13144.59 - (307.08)^2}$$

$$= \frac{322.22}{24003.18} = 0.0134$$

$a = \overline{y} - b\,\overline{x} = 9.72 - 0.013 \times 341.12$

$= 9.27$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{1232.76 - 9.27 \times 87.48 - 0.013 \times 3020.62}{9-2}}$$

$= 7.39$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{7.39}{\sqrt{2667.01}} = 0.143$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{0.013}{0.143}$$

$= 0.09$

F. Everest Bank Limited (EBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	31.56	0	0	996.03	0	729.54
2001/02	32.91	20	658.20	1083.06	400	658.43
2002/03	29.90	20	598.00	894.01	400	821.96
2003/04	45.58	20	911.60	2077.53	400	168.74
2004/05	54.20	0	0	2937.64	0	19.09
2005/06	62.80	25	1570	3943.84	625	17.89
2006/07	78.40	10	784	6146.56	100	393.22
2007/08	91.82	20	1836.40	8430.91	400	1105.56
2008/09	99.99	30	2999.70	998.00	900	1715.61
N = 9	Σx = 527.16	Σy = 145	Σxy = 9357.90	Σx^2 = 36507.58	Σy^2 = 3225	$\Sigma(x-\bar{x})^2$ = 5630

Where,

x = Earning Per Share (EPS)

y = Dividend Per Share (DPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{527.16}{9} = 58.57$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{145}{9} = 16.11$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{5630}{9}} = 25.01$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{25.01}{58.57} \times 100\% = 42.70\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 9357.90 - 527.16 \times 145}{\sqrt{[9 \times 36507.58 - (527.16)^2][9 \times 3225 - (145)^2]}}$$

$$= \frac{7782.90}{\sqrt{50670.55 \times 8000}}$$

$$= 0.3866$$

$r^2 = (r)^2 = (0.3866)^2 = 0.1494$ i.e. 14.94%

Calculation of standard error of correlation coefficient (S.E.(r))

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.1494}{\sqrt{9}} = 0.283$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.283 = 0.190

Now,

Regression Equation of y on x is

y = a + bx …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (DPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 9357.90 - 527.16 \times 145}{9 \times 36507.58 - (527.16)^2}$$

$$= \frac{7782.90}{50670.55} = 0.153$$

$a = \bar{y} - b\bar{x} = 16.11 - 0.153 \times 58.57$

$= 7.14$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{3225 - 7.14 \times 145 - 0.153 \times 9358.90}{9-2}}$$

$= 10.40$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{10.40}{\sqrt{5630}} = 0.138$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{0.153}{0.138}$$

$= 1.108$

Appendix-X

II. Simple Correlation Regression Analysis between DPS and MPS

A. Standard Chartered Bank Nepal Limited (SCBNL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	100	2144	214400	10000	4596736	4.97
2001/02	100	1550	155000	10000	2402500	4.97
2002/03	110	1640	180400	12100	2689600	149.57
2003/04	110	1745	191950	12100	3045025	149.57
2004/05	120	2345	281400	14400	5499025	494.17
2005/06	130	3775	472750	16900	14250625	1038.77
2006/07	80	5900	472000	6400	34810000	315.77
2007/08	80	6830	546400	6400	46648900	315.77
2008/09	50	6010	300500	2500	36120100	2281.97
N = 9	Σx = 880	Σy = 31939	Σxy = 2832800	Σx^2 = 90800	Σy^2 = 150062511	$\Sigma(x-\bar{x})^2$ = 4755.53

Where,

x = Dividend Per Share (DPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) $= \frac{\Sigma x}{n} = \frac{880}{9} = 97.77$

Mean ($\bar{y}$) $= \frac{\Sigma y}{n} = \frac{31939}{9} = 3548.77$

Standard deviation (σ) $= \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{4755.50}{9}} = 22.98$

C.V. $= \frac{\sigma}{\bar{x}} \times 100 = \frac{22.98}{97.77} \times 100\% = 23.51$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 2832800 - 880 \times 31939}{\sqrt{[9 \times 90800 - (880)^2]\,[9 \times 150062511 - (31939)^2]}}$$

$$= \frac{-2611120}{\sqrt{42800 \times 330462878}}$$

$$= 0.6943$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.6943)^2 = 0.4820$ i.e. 48.20%

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.4820}{\sqrt{9}} = 0.172$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.283 = 0.190

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 2832800 - 880 \times 31939}{9 \times 90800 - (880)^2}$$

$$= \frac{-2611120}{42800} = -61$$

$a = \bar{y} - b\bar{x} = 3548.77 - (-61 \times 97.77)$

$= 9512.74$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{150062511 - 9512.74 \times 31939 - (-61 \times 2832800)}{9-2}}$$

$= 1649.06$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{1649.06}{\sqrt{4755.53}} = 23.91$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-61}{23.91}$$

$= -2.55$

B. Nabil Bank Limited (NABIL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	40	1500	60000	1600	2250000	377.91
2001/02	30	735	22050	900	540225	866.71
2002/03	50	740	37000	2500	547600	89.11
2003/04	65	1000	65000	4225	1000000	30.91
2004/05	70	1505	105350	4900	2265025	111.51
2005/06	85	2240	190400	7225	5017600	653.31
2006/07	100	5050	505000	10000	25502500	1645.11
2007/08	60	5275	316500	3600	27825625	0.31
2008/09	35	4899	171465	1225	24000201	547.31
N = 9	Σx = 535	Σy = 22944	Σxy = 1472765	Σx^2 = 36175	Σy^2 = 88948776	$\Sigma(x-\bar{x})^2$ = 4372.19

Where,

x = Dividend Per Share (DPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{535}{9} = 59.44$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{22944}{9} = 2599.33$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{4372.45}{9}} = 22.04$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{22.04}{59.44} \times 100\% = 37.08\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 1472765 - 535 \times 22944}{\sqrt{[9 \times 36175 - (535)^2][9 \times 88948776 - (22944)^2]}}$$

$$= \frac{-979845}{\sqrt{39350 \times 274111848}}$$

$$= 0.2983$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.2983)^2 = 0.0890$ i.e. 8.90%

Calculation of standard error of correlation coefficient

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.0.0890}{\sqrt{9}} = 0.3037$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.3037 = 0.2048

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 1472765 - 535 \times 22944}{9 \times 36175 - (535)^2}$$

$$= \frac{979845}{39350} = 24.90$$

$$a = \bar{y} - b\bar{x} = 2549.33 - 24.90 \times 59.44$$

$$= 1069.27$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{88948776 - 1069.27 \times 22944 - 24.90 \times 1472765}{9-2}}$$

$$= 1990.82$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{1990.82}{\sqrt{4372.19}} = 30.10$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{24.90}{30.10}$$

$$= 0.827$$

C. Nepal Investment Bank Limited (NIBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	1150	0	0	1322500	123.43
2001/02	0	760	0	0	577600	123.43
2002/03	20	795	15900	400	632025	79.03
2003/04	15	940	14100	225	883600	15.13
2004/05	12.50	800	10000	156.25	640000	1.93
2005/06	20	1260	25200	400.00	1587600	79.03
2006/07	5	1729	8645	25.00	2989441	37.33
2007/08	7.50	2450	18375	56.25	6002500	13.03
2008/09	20	1386	27760	400.00	1926544	79.03
N = 9	Σx = 100	Σy = 11272	Σxy = 119980	Σx^2 = 36175	Σy^2 = 16561810	$\Sigma(x-\bar{x})^2$ = 551.37

Where,

x = Dividend Per Share (DPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) $= \frac{\Sigma x}{n} = \frac{100}{9} = 11.11$

Mean ($\bar{y}$) $= \frac{\Sigma y}{n} = \frac{11272}{9} = 1252.44$

Standard deviation (σ) $= \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{551.37}{9}} = 7.82$

C.V. $= \frac{\sigma}{\bar{x}} \times 100 = \frac{7.82}{11.11} \times 100\% = 70.45\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 119980 - 100 \times 11272}{\sqrt{[9 \times 165618110 - (11272)^2]\,[9 \times 16561810 - (11272)^2]}}$$

$$= \frac{-47380}{\sqrt{4962.50 \times 21998306}}$$

$$= -0.1434$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.1434)^2 = 0.0206$ i.e. 2.06%

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.0206}{\sqrt{9}} = 0.3265$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.3265 = 0.2202

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 119980 - 100 \times 11272}{9 \times 1662.50 - (100)^2}$$

$$= \frac{-47380}{4962.50} = -9.54$$

$a = \bar{y} - b\bar{x} = 1252.44 - (-9.54 \times 11.11)$

$= 1358.42$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{16561810 - 1358.42 \times 11272 - (-9.54 \times 119980)}{9-2}}$$

$$= 584.84$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{584.84}{\sqrt{551.37}} = 24.90$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-9.54}{24.90}$$

$$= - 0.3831$$

D. Himalayan Bank Limited (HBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	27.50	1500	41250	756.25	2250000	283.87
2001/02	25.00	1000	25000	625.00	1000000	74.47
2002/03	1.32	836	1103.52	1.74	698896	226.50
2003/04	0	840	0	0	705600	267.97
2004/05	11.58	920	10653.60	134.09	846400	22.94
2005/06	30.00	1100	33000	900.00	1210000	185.77
2006/07	15.00	1740	26100	225.00	3027600	1.87
2007/08	25.00	1980	49500	625.00	3920400	74.47
2008/09	12.00	1760	21200	144.00	3097600	19.09
N = 9	Σx = 147.40	Σy = 147.40	Σxy = 207727.12	Σx^2 = 3411.08	Σy^2 = 16756496	$\Sigma(x-\bar{x})^2$ = 1156.95

Where,

x = Dividend Per Share (DPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{147.40}{9} = 16.37$

$$\text{Mean } (\bar{y}) = \frac{\Sigma y}{n} = \frac{11676}{9} = 1297.33$$

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{1156.95}{9}} = 11.33$$

$$\text{C.V.} = \frac{\sigma}{\bar{x}} \times 100 = \frac{11.33}{16.37} \times 100\% = 69.26\%$$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 207727.12 - 147.40 \times 11676}{\sqrt{[9 \times 3411.08 - (147.40)^2]\,[9 \times 16756496 - (11676)^2]}}$$

$$= \frac{148504.68}{\sqrt{8972.96 \times 14479488}}$$

$$= 0.4120$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.4120)^2 = 0.1697$ i.e. 16.97%

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.1697}{\sqrt{9}} = 0.2768$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2768 = 0.1867

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$$\Sigma y = Na + b\,\Sigma x \text{ ……. (ii)}$$

$$\Sigma xy = a\,\Sigma x + bx^2 \text{ ..……. (iii)}$$

By solving these two normal equation we get,

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

$$= \frac{9 \times 207727.12 - 147.40 \times 11676}{9 \times 3411.08 - (147.40)^2}$$

$$= \frac{148501.68}{8972.96} = 16.54$$

$$a = \bar{y} - b\,\bar{x} = 1297.33 - 16.54 \times 16.37$$

$$= 1026.57$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{1656496 - 1026.57 \times 11676 - 16.54 \times 207727.12}{9-2}}$$

$$= 436.61$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{436.61}{\sqrt{1156.95}} = 12.83$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{16.54}{1.289}$$

$$= 1.289$$

E. Bank of Kathmandu Limited (BOKL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	850	0	0	722500	94.47
2001/02	10	254	2540	100	64516	0.07
2002/03	5	198	990	25	39204	22.27
2003/04	10	295	2950	100	87025	0.07
2004/05	15	430	6450	225	184900	27.87
2005/06	18	850	1530	324	722500	68.55
2006/07	20	1375	2750	400	1890625	105.67
2007/08	2.11	2350	4958.50	4.45	5522500	57.91
2008/09	7.37	1825	13450.25	54.31	3330625	5.52
N = 9	Σx = 87.48	Σy = 8427	Σxy = 74138.75	Σx^2 = 1232.76	Σy^2 = 12564395	$\Sigma(x-\bar{x})^2$ = 382.40

Where,

x = Dividend Per Share (DPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{147.40}{9} = 16.37$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{11676}{9} = 1297.33$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{382.40}{9}} = 6.51$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{6.51}{9.72} \times 100\% = 82.19\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 74138.75 - 87.48 \times 8427}{\sqrt{[9 \times 1232.76 - (87.48)^2]\,[9 \times 12564395 - (8427)^2]}}$$

$$= \frac{-69945.21}{\sqrt{3442.08 \times 42065226}}$$

$$= -0.1836$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.1838)^2 = 0.0338$ i.e. 3.38%

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1- 0.0338}{\sqrt{9}} = 0.3221$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.3221 = 0.2172

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 74138.75 - 87.48 \times 8427}{9 \times 1232.76 - (87.48)^2}$$

$$= \frac{-69945.21}{3442.08} = -20.32$$

$$a = \bar{y} - b\bar{x} = 1297.33 - 16.54 \times 16.37$$

$$= 1026.57$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{12564395 - 1133.84 \times 8427 - (-20.32 \times 74138.75)}{9-2}}$$

$$= 803.21$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{803.21}{\sqrt{382.40}} = 41.07$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-20.32}{41.07}$$

$$= -0.4948$$

F. Everest Bank Limited (EBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	750	0	0	562500	259.53
2001/02	20	430	8600	400	184900	15.13
2002/03	20	445	8900	400	198025	15.13
2003/04	20	680	13600	400	462400	15.13
2004/05	0	870	0	0	756900	259.53
2005/06	25	1379	34475	625	1901641	89.03
2006/07	10	2430	24300	100	5904900	37.33
2007/08	20	3132	62640	400	9809424	15.13
2008/09	30	2455	73650	900	6027025	192.93
N = 9	Σx = 145	Σy = 12571	Σxy = 226165	Σx^2 = 3225	Σy^2 = 25807715	$\Sigma(x-\bar{x})^2$ = 888.87

Where,

x = Dividend Per Share (DPS)

y = Market Price Per Share (MPS)

Now, Mean ($\overline{x}$) = $\frac{\Sigma x}{n} = \frac{145}{9} = 16.11$

Mean ($\overline{y}$) = $\frac{\Sigma y}{n} = \frac{12571}{9} = 1396.77$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\overline{x})^2}{N}} = \sqrt{\frac{888.87}{9}} = 9.93$

C.V. = $\frac{\sigma}{\overline{x}} \times 100 = \frac{9.93}{16.11} \times 100\% = 61.68\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 226165 - 145 \times 12571}{\sqrt{[9 \times 3225 - (145)^2]\,[9 \times 25807715 - (12571)^2]}}$$

$$= \frac{212690}{\sqrt{8000 \times 74239394}}$$

$$= 0.2760$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.2760)^2 = 0.0762$ i.e. 7.62%

Calculation of standard error of correlation coefficient

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.0762}{\sqrt{9}} = 0.3079$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.3079 = 0.2077

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 226165 - 145 \times 12571}{9 \times 3225 - (145)^2}$$

$$= \frac{212690}{8000} = 26.58$$

$$a = \bar{y} - b\bar{x} = 1396.77 - 26.58 \times 16.11$$

$$= 968.56$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{25807715 - 968.56 \times 12571 - 26.58 \times 226165}{9-2}}$$

$$= 1043.37$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{1043.37}{\sqrt{888.87}} = 34.99$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{26.58}{34.99}$$

= 0.7596

Appendix-XI

III. Simple Correlation and Regression Analysis between DPS and NW

A. Standard Chartered Bank Nepal Limited (SCBNL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	100	327.50	32750	10000	107.256.25	4.97
2001/02	100	363.86	36386	10000	132394.09	4.97
2002/03	110	403.15	44346.50	12100	162529.92	149.57
2003/04	110	399.25	43917.50	12100	159400.56	149.57
2004/05	120	422.38	50685.60	14400	178404.86	494.17
2005/06	130	468.22	60868.60	16900	219229.96	1038.77
2006/07	80	512.12	40969.60	6400	262266.89	315.77
2007/08	80	401.51	32120.80	6400	161210.28	315.77
2008/09	50	327.53	16376.50	2500	107275.90	2281.97
N = 9	Σx = 880	Σy = 3625.52	Σxy = 358421.10	Σx^2 = 90800	Σy^2 = 107275.90	$\Sigma(x-\bar{x})^2$ = 4755.53

Where,

x = Dividend Per Share (DPS)

y = Networth Per Share (NW)

Now, Mean ($\bar{x}$) $= \frac{\Sigma x}{n} = \frac{880}{9} = 97.77$

Mean ($\bar{y}$) $= \frac{\Sigma y}{n} = \frac{3625.52}{9} = 402.88$

Standard deviation (σ) $= \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{4755.50}{9}} = 22.98$

C.V. $= \frac{\sigma}{\bar{x}} \times 100 = \frac{22.98}{97.77} \times 100\% = 23.51$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 358421.10 - 880 \times 3625.52}{\sqrt{[9 \times 90800 - (880)^2]\,[9 \times 1489968.71 - (3625.52)^2]}}$$

$$= \frac{35332.30}{\sqrt{42800 \times 265323.11}}$$

$$= 0.3316 \quad \text{i.e. } 33.15\%$$

Calculation of coefficient of determination (r^2)

$$r^2 = (r)^2 = (0.3316)^2 = 0.110 \text{ i.e. } 10.99\%$$

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.11}{\sqrt{9}} = 0.2967$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2967 = 0.2001

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (NW)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 358421.10 - 880 \times 3625.52}{9 \times 90800 - (880)^2}$$

$$= \frac{35332.30}{42800} = 0.825$$

$$a = \bar{y} - b\bar{x} = 402.83 - 0.825 \times 97.77 = 322.16$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{1489968.71 - 322.16 \times 3625.52 - 0.825 \times 358421.10}{9-2}}$$

$$= 61.26$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{61.26}{\sqrt{4755.53}} = 0.888$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{0.825}{0.888}$$

$$= 0.9291$$

B. Nabil Bank Limited (NABIL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	40	216	8640	1600	46656	377.91
2001/02	30	233	6990	900	54289	866.71
2002/03	50	267	13350	2500	71289	89.11
2003/04	65	301	19565	4225	90601	30.91
2004/05	70	337	23590	4900	113569	111.51
2005/06	85	381	32385	7225	145161	653.31
2006/07	100	418	41800	10000	174724	1645.11
2007/08	60	354	21240	3600	125316	0.31
2008/09	35	324	11340	1225	104976	547.31

N = 9	Σx = 535	Σy = 2831	Σxy = 178900	Σx^2 = 36175	Σy^2 = 926581	$\Sigma(x-\bar{x})^2$ = 4372.19

Where,

x = Dividend Per Share (DPS)

y = New worth Per Share (NW)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{535}{9} = 59.44$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{2831}{9} = 314.55$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{4372.45}{9}} = 22.04$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{22.04}{59.44} \times 100\% = 37.08\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 178900 - 535 \times 2831}{\sqrt{[9 \times 36175 - (535)^2]\,[9 \times 926581 - (2831)^2]}}$$

$$= \frac{95515}{\sqrt{39350 \times 324668}}$$

$$= 0.845$$

i.e. = 84.50%

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.845)^2 = 0.7141$

Calculation of standard error of correlation coefficient

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.7171}{\sqrt{9}} = 0.0953$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.0953 = 0.0643

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (NW)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 178900 - 535 \times 2831}{9 \times 36175 - (535)^2}$$

$$= \frac{95515}{39350} = 2.427$$

$$a = \bar{y} - b\bar{x} = 314.55 - 2.427 \times 59.44$$

$$= 170.28$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{926581 - 170.28 \times 2831 - 2.427 \times 178900}{9-2}}$$

$$= 38.41$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{38.41}{\sqrt{4372.19}} = 0.580$$

Calculation of T-value (t)

T-value (t) = $\frac{b}{S_b} = \frac{2.427}{0580}$

= 4.184

C. Nepal Investment Bank Limited (NIBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	275.96	0	0	76153.92	123.43
2001/02	0	307.95	0	0	94833.20	123.43
2002/03	20	216.24	4324.80	400	46759.73	79.03
2003/04	15	246.89	3703.35	225	60954.67	15.13
2004/05	12.50	200.80	2510.00	156.25	40320.64	1.93
2005/06	20	239.67	4793.40	400.00	57441.7	79.03
2006/07	5	234.37	1171.85	25.00	54929.29	37.33
2007/08	7.50	223.17	1673.77	56.25	4984.84	13.03
2008/09	20	162.34	3246.80	400.00	26354.27	79.03
N = 9	Σx = 100	Σy = 2107.39	Σxy = 21423.97	Σx^2 = 36175	Σy^2 = 507552.26	$\Sigma(x-\bar{x})^2$ = 551.37

Where,

x = Dividend Per Share (DPS)

y = New worth Per Share (NW)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{100}{9} = 11.11$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{2107.39}{9} = 2341.15$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{551.37}{9}} = 7.82$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{7.82}{11.11} \times 100\% = 70.45\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 21423.97 - 100 \times 2107.39}{\sqrt{[9 \times 1662.50 - (100)^2]\,[9 \times 507552.62 - (2107.39)^2]}}$$

$$= \frac{-17923.27}{\sqrt{4962.50 \times 126880.96}}$$

$$= -0.7143 \quad \text{i.e. } 71.43\%$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (-0.7143)^2 = 0.5102$

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.0206}{\sqrt{9}} = 0.3265$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.1633 = 0.1101

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (NW)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 21423.97 - 100 \times 2107.39}{9 \times 1662.50 - (100)^2}$$

$$= \frac{-17923.27}{4962.50} = -3.611$$

$$a = \bar{y} - b\bar{x} = 234.15 - (-3.611 \times 11.11)$$

$$= 274.26$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{507552.62 - 274.26 \times 2107.34 - (-3.611 \times 21423.97)}{9-2}}$$

$$= 31.49$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{31.49}{\sqrt{551.37}} = 1.34$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-3.611}{1.34}$$

$$= -2.69$$

D. Himalayan Bank Limited (HBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	27.50	399.42	10984.05	756.25	159536.33	283.87
2001/02	25.00	393.34	9833.50	625.00	154716.35	74.47
2002/03	1.32	247.81	327.10	1.74	61409.79	226.50
2003/04	0	246.93	0	0	60974.42	267.97
2004/05	11.58	239.59	2774.45	134.09	57403.36	22.94
2005/06	30.00	228.72	6861.60	900.00	52312.83	185.77
2006/07	15.00	264.74	3971.10	225.00	70087.26	1.87
2007/08	25.00	247.95	6198.75	625.00	61479.20	74.47
2008/09	12.00	256.52	3078.24	144.00	65802.51	19.09
N = 9	Σx = 147.40	Σy = 2525.02	Σxy = 44028.79	Σx^2 = 3411.08	Σy^2 = 743722.05	$\Sigma(x-\bar{x})^2$ = 1156.95

Where,

x = Dividend Per Share (DPS)

y = New worth Per Share (NW)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{147.40}{9} = 16.37$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{2525.02}{9} = 280.55$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{1156.95}{9}} = 11.33$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{11.33}{16.37} \times 100\% = 69.26\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 44028.79 - 147.40 \times 2525.02}{\sqrt{[9 \times 3411.08 - (147.40)^2]\,[9 \times 743722.05 - (2525.02)^2]}}$$

$$= \frac{24071.16}{\sqrt{8972.96 \times 317772.44}}$$

$$= 0.4508 \text{ i.e. } 45.08\%$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.4508)^2 = 0.2032$

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1- 0.2032}{\sqrt{9}} = 0.2656$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2656 = 0.1791

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (NW)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 44028.79 - 147.40 \times 2525.02}{9 \times 3411.08 - (147.40)^2}$$

$$= \frac{24071.16}{8972.96} = 2.682$$

$a = \bar{y} - b\bar{x} = 280.55 - 2.682 \times 16.37$

$= 136.64$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{743722.05 - 136.64 \times 2525.02 - 2.682 \times 44028.79}{9-2}}$$

$= 200.22$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{200.22}{\sqrt{1156.95}} = 5.886$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{2.682}{5.886}$$

$= 0.4557$

E. Bank of Kathmandu Limited (BOKL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	207.72	0	0	43147.59	94.47
2001/02	10	171.83	1718.30	100	29525.54	0.07
2002/03	5	192.52	962.60	25	37063.95	22.27
2003/04	10	218.38	2183.60	100	47689.82	0.07
2004/05	15	213.60	3204.00	225	45624.96	27.87
2005/06	18	230.67	4152.06	324	53208.64	68.55
2006/07	20	162.81	3256.20	400	26507.09	105.67
2007/08	2.11	222.51	469.49	4.45	49510.70	57.91
2008/09	7.37	206.25	1520.06	54.31	42539.06	5.52
N = 9	Σx = 87.48	Σy = 1826.29	Σxy = 17466.31	Σx^2 = 1232.76	Σy^2 = 374817.35	$\Sigma(x-\bar{x})^2$ = 382.40

Where,

x = Dividend Per Share (DPS)

y = New worth Per Share (NW)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{87.48}{9} = 9.72$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{1826.29}{9} = 202.92$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{382.40}{9}} = 6.51$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{6.51}{9.72} \times 100\% = 67.06\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 17466.31 - 87.48 \times 1826.29}{\sqrt{[9 \times 1232.76 - (87.48)^2][9 \times 374817.35 - (1826.29)^2]}}$$

$$= \frac{-2567.05}{\sqrt{3442.08 \times 38020.98}}$$

= 0.2244 i.e. 22.44%

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (-0.2244)^2 = 0.0504$

Calculation of standard error of correlation coefficient

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.0504}{\sqrt{9}} = 0.3165$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.3165 = 0.2135

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (NW)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..…….. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 17466.31 - 87.48 \times 1826.29}{9 \times 1232.76 - (87.48)^2}$$

$$= \frac{-2567.05}{3442.08} = - 0.7458$$

$$a = \bar{y} - b\bar{x} = 202.92 - (-0.7458 \times 9.72)$$

$$= 210.16$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{374817.35 - 210.16 \times 1826.29 - (-0.7458 \times 17466.31)}{9-2}}$$

$$= 23.99$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{23.99}{\sqrt{382.40}} = 1.227$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-0.7458}{1.227}$$

$$= - 0.607$$

F. Everest Bank Limited (EBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	173.01	0	0	29932.46	259.53
2001/02	20	241.63	4832.60	400	58385.05	15.13
2002/03	20	150.10	3002.00	400	22530.01	15.13
2003/04	20	171.52	3430.40	400	29419.11	15.13
2004/05	0	219.87	0	0	48342.81	259.53
2005/06	25	217.67	5441.75	625	47380.56	89.03
2006/07	10	292.75	2927.50	100	85702.56	37.33
2007/08	20	321.77	6435.40	400	103535.93	15.13
2008/09	30	313.64	9409.20	900	9837.05	192.93
N = 9	Σx = 145	Σy = 2101.96	Σxy = 35478.85	Σx^2 = 3225	Σy^2 = 523598.20	$\Sigma(x-\bar{x})^2$ = 888.87

Where,

x = Dividend Per Share (DPS)

y = New worth Per Share (NW)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{145}{9} = 16.11$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{2101.96}{9} = 233.55$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{888.87}{9}} = 9.93$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{9.93}{16.11} \times 100\% = 61.68\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 35478.85 - 145 \times 2101.96}{\sqrt{[9 \times 3225 - (145)^2]\,[9 \times 523598.20 - (2101.96)^2]}}$$

$$= \frac{14525.45}{\sqrt{8000 \times 294147.95}}$$

$$= 0.2994 \quad \text{i.e. } 29.94\%$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.2994)^2 = 0.0897$

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1- 0.0897}{\sqrt{9}} = 0.3034$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.3034 = 0.2047

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPS)

y = Dependent Variable (NW)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 35478.85 - 145 \times 2101.96}{9 \times 3225 - (145)^2}$$

$$= \frac{14525.45}{8000} = 1.8157$$

$a = \overline{y} - b\overline{x} = 233.55 - 1.8157 \times 16.11$

$= 204.29$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{523598.20 - 204.29 \times 2101.96 - 1.8157 \times 35478.85}{9-2}}$$

$= 65.21$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \overline{x})^2}} = \frac{65.21}{\sqrt{888.87}} = 2.1874$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{1.8157}{2.1874}$$

$= 0.83$

Appendix-XII

IV. Simple Correlation Regression Analysis between DPR and MPS

A. Standard Chartered Bank Nepal Limited (SCBNL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	78.81	2144	168968.64	6211.01	4596736	117.94
2001/02	70.86	1550	109833.00	5021.13	2402500	8.46
2002/03	73.68	1640	120835.20	5428.74	2689600	32.83
2003/04	76.63	1745	133719.35	5872.15	3045025	75.34
2004/05	83.83	2345	196581.35	7027.46	5499025	252.17
2005/06	73.93	3775	279085.75	5465.64	14250625	35.76
2006/07	47.80	5900	282020.00	2284.84	34810000	406.02
2007/08	60.64	6830	414171.20	3677.20	46648900	53.43
2008/09	45.45	6010	273154.50	2065.70	36120100	506.25
N = 9	Σx = 611.63	Σy = 31939	Σxy = 1978368.99	Σx^2 = 43053.87	Σy^2 = 150062511	$\Sigma(x-\bar{x})^2$ = 1488.20

Where,

x = Earning Per Share (DPR)

y = Dividend Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{611.63}{9} = 67.95$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{31939}{9} = 3548.77$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{1488.20}{9}} = 12.85$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{12.85}{67.95} \times 100\% = 18.92\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 1987368.99 - 611.63 \times 31939}{\sqrt{[9 \times 43053.87 - (611.63)^2]\,[9 \times 150062511 - (31939)^2]}}$$

$$= \frac{-1729529.66}{\sqrt{13393.57 \times 330462878}}$$

$$= -0.8221 = -82.41\%$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.8221)^2 = 0.6758$ i.e. 67.58%

Calculation of standard error of correlation coefficient S.E.(r)

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.6758}{\sqrt{9}} = 0.1081$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.1081 = 0.0729

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPR)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 1978368.99 - 611.63 \times 31939}{9 \times 43053.87 - (611.63)^2}$$

$$= \frac{-1729529.66}{13393.57} = -129.13$$

$a = \bar{y} - b\bar{x} = 3548.77 - (-129.13) \times 67.95$

$= 12323.15$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{150062511 - 12323.15 \times 31939 - (-129.13 \times 1978368.99)}{9-2}}$$

$$= \sqrt{1705744.40}$$

$= 1306.04$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{1306.04}{\sqrt{1488.20}} = 33.85$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-129.13}{33.85}$$

$= -3.81$

B. Nabil Bank Limited (NABIL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	67.50	1500	101250.00	4556.25	2250000	49.28
2001/02	54.30	735	39910.50	2948.49	540225	38.19
2002/03	59.06	740	43704.40	3488.08	547600	2.01
2003/04	70.19	1000	70190.00	4926.63	1000000	94.28
2004/05	66.36	1505	99871.80	4403.64	2265025	34.57
2005/06	65.78	2240	147347.20	4327.00	5017600	28.09
2006/07	72.95	5050	368397.50	5321.70	25502500	155.50
2007/08	55.40	5275	292235.00	3069.16	27825625	25.80
2008/09	32.78	4899	160589.22	1074.52	24000201	267.29
N = 9	Σx = 544.32	Σy = 22944	Σxy = 1323495.62	Σx^2 = 34115.47	Σy^2 = 88948776	$\Sigma(x-\bar{x})^2$ = 695.01

Where,

x = Dividend Payout Ratio (DPR)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{544.32}{9} = 60.48$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{22944}{9} = 2599.33$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{695}{9}} = 8.78$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{8.78}{60.48} \times 100\% = 14.53\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 1323495.62 - 544.32 \times 22944}{\sqrt{[9 \times 34115.47 - (544.32)^2][9 \times 88948776 - (22944)^2]}}$$

$$= \frac{-577417.50}{\sqrt{10754.96 \times 274111848}}$$

= -0.3363 i.e. 33.63

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.3363)^2 = 0.1131$ i.e. 11.31%

Calculation of standard error of correlation coefficient S.E. (r)

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.1131}{\sqrt{9}} = 0.2956$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2956 = 0.1994

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPR)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 1323495.62 - 544 \times 22944}{9 \times 34115.47 - (544.32)^2}$$

$$= \frac{-577417.50}{10754.96} = -53.68$$

$a = \bar{y} - b\bar{x} = 2549.33 - (-53.63) \times 60.48$

$= 5795.89$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{88948776 - 5795.89 \times 22944 - (-53.68) \times 1323495.62}{9-2}}$$

$= 1964.43$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{1964.43}{\sqrt{695.01}} = 74.51$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-53.68}{74.51}$$

$= - 0.7204$

C. Nepal Investment Bank Limited (NIBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	1150	0	0	1322500	593.41
2001/02	0	760	0	0	577600	593.41
2002/03	50.56	795	40195.20	2556.31	632025	686.44
2003/04	29.01	940	27269.40	841.58	883600	21.62
2004/05	31.64	800	25312.00	1001.08	640000	52.99
2005/06	33.70	1260	42462.00	1135.69	1587600	87.23
2006/07	8.00	1729	13832.00	64	2989441	267.65
2007/08	12.96	2450	31752.00	167.96	6002500	129.96
2008/09	53.44	1386	74174.72	2855.83	1926544	845.64
N = 9	Σx = 219.31	Σy = 11272	Σxy = 254997.32	Σx^2 = 8622.46	Σy^2 = 16561810	$\Sigma(x-\bar{x})^2$ = 3278.35

Where,

x = Dividend Payout Ratio (DPR)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{219.31}{9} = 24.36$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{11272}{9} = 1252.44$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{3278.35}{9}} = 19.08$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{19.08}{24.36} \times 100\% = 78.34\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 119980 - 100 \times 11272}{\sqrt{[9 \times 165618110 - (11272)^2]\,[9 \times 16561810 - (11272)^2]}}$$

$$= \frac{-177086.44}{\sqrt{29505.26 \times 21998306}}$$

$$= -0.2198 \qquad \text{i.e. } 21.98\ \%$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.2198)^2 = 0.0483$ i.e. 4.83%

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.0483}{\sqrt{9}} = 4.83\%$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.3172 = 0.2140

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPR)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 254997.32 - 219.31 \times 11272}{9 \times 8622.46 - (219.31)^2}$$

$$= \frac{-177086.44}{29505.26} = -6$$

$a = \bar{y} - b\bar{x} = 1252.44 - (-6) \times 24.36$

$= 1398.60$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{16561810 - 1398.60 \times 11272 - (-6) \times 254997.32}{9-2}}$$

$= 576.53$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{576.53}{\sqrt{3278.35}} = 10.06$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-6}{10.06}$$

$= - 0.5964$

D. Himalayan Bank Limited (HBL)

Year	x	y	xy	x^2	y^2	$(x- \bar{x})^2$
2000/01	29.39	1500	44085	863.77	2250000	12.81
2001/02	41.48	1000	41480	1720.59	1000000	245.54
2002/03	2.67	836	2232.12	7.12	698896	535.46
2003/04	0	840	0	0	705600	666.15
2004/05	24.17	920	22236.40	584.18	846400	2.69
2005/06	50.64	1100	55704.00	2564.40	1210000	616.52
2006/07	24.72	1740	43012.80	611.07	3027600	1.18
2007/08	39.84	1980	78883.20	1587.22	3920400	196.84
2008/09	19.38	1760	34108.80	357.58	3097600	41.34
N = 9	$\Sigma x =$ 232.29	$\Sigma y =$ 11676	$\Sigma xy =$ 320742.32	$\Sigma x^2 =$ 8313.97	$\Sigma y^2 =$ 16756496	$\Sigma(x-\bar{x})^2 =$ 2318.53

Where,

x = Dividend Payout Ratio (DPR)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{1167}{9} = 16.05$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{11676}{9} = 1297.33$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{2318.53}{9}} = 16.05$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{16.05}{25.81} \times 100\% = 62.18\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 320742.32 - 232.29 \times 11676}{\sqrt{[9 \times 8313.97 - (232.29)^2][9 \times 16756496 - (11676)^2]}}$$

$$= \frac{174462.84}{\sqrt{20867.085 \times 14479488}}$$

$$= 0.3174$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.3174)^2 = 0.1007$ i.e. 10.07%

Calculation of standard error of correlation coefficient

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.1007}{\sqrt{9}} = 0.2998$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2998 = 0.2022

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPR)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 320742.32 - 232.29 \times 11676}{9 \times 8313.97 - (232.29)^2}$$

$$= \frac{174462.84}{20867.05} = 8.36$$

$$a = \bar{y} - b\bar{x} = 1297.33 - 8.36 \times 25.81$$

$$= 1080.55$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{1656496 - 1081.55 \times 11676 - 8.36 \times 320742.32}{9-2}}$$

$$= 454.64$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{454.64}{\sqrt{2318.53}} = 9.44$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{8.36}{9.44}$$

$$= 0.885$$

E. Bank of Kathmandu Limited (BOKL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	850	0	0	722500	6374.42
2001/02	500	254	127000	250000	64516	176534.42
2002/03	28.22	198	5587.56	796.36	39204	2664.62
2003/04	36.36	295	10726.20	1322.04	87025	1890.51
2004/05	49.83	430	21426.90	2483.02	184900	900.60
2005/06	41.22	850	35037.00	1699.08	722500	1491.50
2006/07	45.98	1375	63222.50	2114.16	1890625	1146.50
2007/08	3.52	2350	8272.00	12.39	5522500	5824.74
2008/09	13.47	1825	24582.75	181.44	3330625	4404.97
N = 9	Σx = 718.60	Σy = 8427	Σxy = 298554.91	Σx^2 = 258608.52	Σy^2 = 12564395	$\Sigma(x-\bar{x})^2$ = 201232.28

Where,

x = Dividend Payout Ratio (DPR)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) $= \frac{\Sigma x}{n} = \frac{718.60}{9} = 79.84$

Mean ($\bar{y}$) $= \frac{\Sigma y}{n} = \frac{8427}{9} = 936.33$

Standard deviation (σ) $= \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{201232.28}{9}} = 149.53$

C.V. $= \frac{\sigma}{\bar{x}} \times 100 = \frac{149.53}{79.84} \times 100\% = 187.28\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 295854.91 - 718.60 \times 8427}{\sqrt{[9 \times 258608.52 - (718.60)^2]\,[9 \times 12564395 - (8427)^2]}}$$

$$= \frac{-3392948}{\sqrt{1811090.72 \times 42065226}}$$

$$= -0.3887$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (0.3887)^2 = 0.1511$ i.e. 15.11%

Calculation of standard error of correlation coefficient

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.1511}{\sqrt{9}} = 0.2830$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2830 = 0.1909

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPR)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 295854.91 - 718.60 \times 8427}{9 \times 258608.52}$$

$$= \frac{-3392948}{1811090.72} = -1.87$$

$a = \bar{y} - b\bar{x} = 936.33 - (-1.87) \times 79.84$

$= 1085.63$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{12564395 - 1085.63 \times 8427 - (-1.87) \times 295854.91}{9-2}}$$

$= 639.48$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{639.48}{\sqrt{201232.28}} = 1.425$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-1.87}{1.425}$$

$= - 1.312$

F. Everest Bank Limited (EBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	0	750	0	0	562500	982.82
2001/02	60.77	430	26131.10	3692.99	184900	865.53
2002/03	66.89	445	29766.05	4474.27	198025	1263.09
2003/04	43.88	680	29838.40	1925.45	462400	157.00
2004/05	0	870	0	0	756900	982.8
2005/06	46.12	1379	63599.48	2127.05	1901641	218.15
2006/07	12.75	2430	30982.52	162.56	5904900	345.96
2007/08	21.78	3132	67214.96	474.36	9809424	91.58
2008/09	30.00	2455	73650.00	900.00	6027025	1.82
N = 9	Σx = 282.19	Σy = 12571	Σxy = 322182.49	Σx^2 = 13756.70	Σy^2 = 25807715	$\Sigma(x-\bar{x})^2$ = 4908.77

Where,

x = Dividend Pay Out Ratio (DPR)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{282.19}{9} = 31.35$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{12571}{9} = 1396.77$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{4908.77}{9}} = 23.35$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{2335}{31.35} \times 100\% = 74.49\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 322182.49 - 242.19 \times 12571}{\sqrt{[9 \times 13756.70 - (282.19)^2][9 \times 25807715 - (12571)^2]}}$$

$$= \frac{-647768.08}{\sqrt{44179 \times 74239394}}$$

$$= -0.3577$$

Calculation of coefficient of determination (r^2)

$r^2 = (r)^2 = (-0.3577)^2 = 0.1279$ i.e. 12.79%

Calculation of standard error of correlation coefficient

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.1279}{\sqrt{9}} = 0.2907$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2907 = 0.1961

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (DPR)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..…….. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 322182.49 - 282.19 \times 12571}{9 \times 13756.70 - (282.19)^2}$$

$$= \frac{-647768.08}{44179.10} = -14.66$$

$$a = \bar{y} - b\bar{x} = 1396.77 - (-14.66) \times 31.55$$

$$= 1858.52$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{25807715 - 1858.52 \times 12571 - (-14.66) \times 322182.49}{9-2}}$$

$$= 1011.89$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{1011.89}{\sqrt{4908.77}} = 14.44$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-14.66}{14.44}$$

$$= 1.015$$

Appendix-XIII

V. Simple correlation and regression analysis between EPS and MPS.

A. Standard chartered Bank Nepal Limited (SCBNL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	126.88	2144	272030.72	16098.53	4596736	267.32
2001/02	141.13	1550	218751.50	19917.67	2402500	4.41
2002/03	149.30	1640	244852.00	22290.49	2689600	36.84
2003/04	143.55	1745	250494.75	20606.60	3045025	0.10
2004/05	143.14	2345	335663.30	20489.05	5499025	0.008
2005/06	175.84	3775	663796.00	30919.70	14250625	1063.41
2006/07	167.37	5900	987483.00	28012.72	34810000	582.74
2007/08	131.92	6830	901013.60	17402.88	46648900	127.91
2008/09	109.99	6010	661039.90	12097.80	36120100	1104.89
N = 9	Σx = 1289.12	Σy = 31939	Σxy = 4535124.77	Σx^2 = 187835.44	Σy^2 = 150062511	$\Sigma(x-\bar{x})^2$ = 3187.62

Where,

x = Earning Per Share (EPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) $= \frac{\Sigma x}{n} = \frac{1289.12}{9} = 143.23$

Mean ($\bar{y}$) $= \frac{\Sigma y}{n} = \frac{31934}{9} = 3548.77$

Standard deviation (σ) $= \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{3187.62}{9}} = 18.82$

C.V. $= \frac{\sigma}{\bar{x}} \times 100 = \frac{18.82}{143.23} \times 100\% = 13.13\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 4535124.77 - 1289.12 \times 31939}{\sqrt{[9 \times 187835.44 - (1289.12)^2]\,[9 \times 15006251 - (31939)^2]}}$$

$$= \frac{-357080.75}{\sqrt{28688.58 \times 330462878}}$$

$$= -0.1160 \text{ i.e. } 11.60\%$$

$r^2 = (r)^2 = (-0.1160)^2 = 0.0134$ i.e. 1.34%

Calculation of standard error of correlation coefficient (S.E.(r))

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.0134}{\sqrt{9}} = 0.3289$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.3289 = 0.2218

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 4535124.77 - 1289.12 \times 31939}{9 \times 187835.44 - (1289.12)^2}$$

$$= \frac{-357080.75}{28688.58} = -12.44$$

$$a = \bar{y} - b\bar{x} = 3548.77 - (-12.44) \times 143.23$$

$$= 5330.55$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{150062511 - 5330.55 \times 31939 - (-1244) \times 4535124.77}{9-2}}$$

$$= 2277.92$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{2277.22}{\sqrt{3187.62}} = 40.29$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{-12.44}{40.29} = -0.3088$$

B. Nabil Bank Limited (NABIL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	59.26	1500	88890.00	3511.74	2250000	1471.49
2001/02	55.25	735	40608.75	3052.56	540225	1795.21
2002/03	84.66	740	62648.40	7167.31	547600	167.96
2003/04	92.61	1000	92610.00	8576.61	1000000	25.10
2004/05	105.49	1505	158762.45	11128.14	2265025	61.93
2005/06	129.21	2240	289430.40	16692.64	5017600	997.92
2006/07	137.08	5050	692254.00	18790.92	25502500	1557.09
2007/08	108.31	5275	571335.25	11731.05	27825625	114.27
2008/09	106.76	4899	523017.24	11397.69	24000201	83.54
N = 9	Σx = 878.63	Σy = 22944	Σxy = 2519556.49	Σx^2 = 92048.30	Σy^2 = 88948776	$\Sigma(x-\bar{x})^2$ =

						6274.51

Where,

x = Earning Per Share (EPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{879.63}{9} = 97.62$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{22944}{9} = 2549.33$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{6274.51}{9}} = 26.40$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{26.40}{97.62} \times 100\% = 27.04\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 2519556.49 - 878.63 \times 22944}{\sqrt{[9 \times 92048.30 - (878.63)^2]\,[9 \times 88949776 - (22944)^2]}}$$

$$= \frac{2516721.69}{\sqrt{56444.02 \times 274111848}}$$

= 0.6398 i.e. 63.98 %

$r^2 = (r)^2 = (0.6398)^2 = 0.4094$ i.e. 40.94%

Calculation of standard error of correlation coefficient (S.E.(r))

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.4094}{\sqrt{9}} = 0.1969$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E.(r) = 0.6745 × 0.1969 = 0.1328

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

$$b = \frac{N\Sigma XY - \Sigma X\Sigma Y}{N\Sigma X^2 - (\Sigma X)^2} = \frac{9 \times 2519556.49 - 878.63 \times 22944}{9 \times 92048.30 - (878.63)^2}$$

$$= \frac{2516721.69}{56444.02} = 44.58$$

$$a = \bar{y} - b\bar{x} = 2549.33 - 44.58 \times 97.62$$

$$= -1802.56$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{88948776 - (1802.56) \times 22944 - 44.58 \times 2519556.49}{9-2}}$$

$$= 1602.89$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{1602.89}{\sqrt{6274.51}} = 20.23$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{44.58}{20.23} = 2.203$$

C. Nepal Investment Bank Limited (NIBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	33.17	1150	38145.50	1100.25	13322500	166.66
2001/02	33.59	760	25528.40	1128.29	577600	156.00
2002/03	39.56	795	31450.20	1565.00	632025	42.51
2003/04	51.70	940	48598.00	2672.89	883600	31.58
2004/05	39.50	800	31600.00	1560.25	640000	43.29
2005/06	59.35	1260	74781.00	3522.42	1587600	176.09
2006/07	62.57	1729	108183.53	3915.00	2989441	271.92
2007/08	57.87	2450	141781.50	3348.93	6002500	139.00
2008/09	37.42	1387	51938.96	1400.25	1926544	74.99
N = 9	Σx = 414.73	Σy = 11272	Σxy = 552007.62	Σx^2 = 20213.28	Σy^2 = 16561810	$\Sigma(x-\bar{x})^2$ = 1102.04

Where,

x = Earning Per Share (EPS)

y = Market Price Per Share (MPS)

Now, Mean $(\bar{x}) = \frac{\Sigma x}{n} = \frac{414.73}{9} = 46.08$

Mean $(\bar{y}) = \frac{\Sigma y}{n} = \frac{11272}{9} = 1252.44$

Standard deviation $(\sigma) = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{1102.04}{9}} = 11.06$

C.V. $= \frac{\sigma}{\bar{x}} \times 100 = \frac{11.06}{46.08} \times 100\% = 24.01\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 552007.62 - 414.73 \times 11272}{\sqrt{[9 \times 20213.28 - (414.73)^2]\,[9 \times 16561810 - (11272)^2]}}$$

$$= \frac{293232.00}{\sqrt{9918.54 \times 21998306}}$$

$= 0.6278$ i.e. 62.78 %

$r^2 = (r)^2 = (0.6278)^2 = 0.3941$ i.e. 39.41%

Calculation of standard error of correlation coefficient (S.E.(r))

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.3941}{\sqrt{9}} = 0.2020$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2020 = 0.1362

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 552007.62 - 414.73 \times 11272}{9 \times 20213.28 - (414.73)^2}$$

$$= \frac{293232.02}{9918.54} = 29.56$$

$a = \bar{y} - b\,\bar{x} = 1252.44 - 29.56 \times 46.08$

$= -109.68$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{16561810 - (-109.68) \times 11272 - 29.56 \times 552007.62}{9-2}}$$

$= 459.93$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{459.93}{\sqrt{1102.04}} = 13.85$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{29.56}{13.85}$$

$= 2.13$

D. Himalayan Bank Limited (HBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	93.56	1500	140340.00	8753.47	2250000	1090.98
2001/02	60.26	1000	60260.00	3631.26	1000000	0.07
2002/03	49.45	836	41340.20	2445.30	698896	122.86
2003/04	49.05	840	41202.00	2405.90	705600	131.79
2004/05	47.91	920	44077.20	2295.36	846400	159.26
2005/06	59.24	1100	65164.00	3509.37	121000	1.64
2006/07	60.66	1740	105548.40	3659.63	3027600	0.01
2007/08	42.74	1980	124225.20	3936.30	3920400	4.88
2008/09	61.90	1760	108944.00	3831.61	3097600	1.87
N = 9	Σx = 544.77	Σy = 11676	Σxy = 731101	Σx^2 = 34488.20	Σy^2 = 16756496	$\Sigma(x-\bar{x})^2$ = 1513.26

Where,

x = Earning Per Share (EPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{544.77}{9} = 60.53$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{11676}{9} = 1297.33$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{1513.26}{9}} = 12.96$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{12.96}{60.53} \times 100\% = 21.42\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 731101 - 544.77 \times 11676}{\sqrt{[9 \times 34488.20 - (544.77)^2]\,[9 \times 16756496 - (11676)^2]}}$$

$$= \frac{219174.48}{\sqrt{13619.44 \times 14479488}}$$

= 0.4936 i.e. 49.36 %

$r^2 = (r)^2 = (0.4936)^2 = 0.2436 = 24.36\%$

Calculation of standard error of correlation coefficient (S.E.(r))

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.2436}{\sqrt{9}} = 0.2521$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.2521 = 0.1701

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$$\Sigma y = Na + b\,\Sigma x \text{ ……. (ii)}$$

$$\Sigma xy = a\,\Sigma x + bx^2 \text{...……. (iii)}$$

By solving these two normal equation we get,

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

$$= \frac{9 \times 731101 - 544.77 \times 11676}{9 \times 34488.20 - (544.77)^2}$$

$$= \frac{219174.48}{13619.44} = 16.09$$

$$a = \bar{y} - b\,\bar{x} = 129733 - 16.09 \times 60.53$$

$$= 323.40$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{16756496 - 323.40 \times 11676 - 16.09 \times 731101}{9-2}}$$

$$= 9.29$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{416.97}{\sqrt{1513.26}} = 10.71$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{16.09}{10.71}$$

$$= 1.50$$

E. Bank of Kathmandu Limited (BOKL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	27.97	850	23774.50	782.32	722500	37.82
2001/02	2.00	254	508.00	4.00	64516	1031.62
2002/03	17.72	198	3508.56	314.00	39204	268.96
2003/04	27.50	295	8112.50	756.25	87025	43.82
2004/05	30.10	430	12943.00	906.01	184900	16.16
2005/06	43.67	850	37119.50	1907.06	722500	91.20
2006/07	43.50	1375	59812.50	1892.25	1890625	87.98
2007/08	59.94	2350	140859.00	3592.80	5522500	666.67
2008/09	54.68	1825	99791.00	2989.90	3330625	422.71
N = 9	Σx = 307.08	Σy = 8427	Σxy = 386428.56	Σx^2 = 13144.59	Σy^2 = 12564395	$\Sigma(x-\bar{x})^2$ = 2667.01

Where,

x = Earning Per Share (EPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{307.08}{9} = 34.12$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{8427}{9} = 936.33$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{2667.01}{9}} = 17.21$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{17.21}{34.12} \times 100\% = 50.45\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2]\,[N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 386428.56 - 307.08 \times 8427}{\sqrt{[9 \times 13144.59 - (307.08)^2]\,[9 \times 12564395 - (8727)^2]}}$$

$$= \frac{890093.88}{\sqrt{24003.18 \times 42065226}}$$

$$= 0.8858 \qquad \text{i.e. } 88.58\ \%$$

$r^2 = (r)^2 = (0.8858)^2 = 0.7847 = 78.47\%$

Calculation of standard error of correlation coefficient (S.E.(r))

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}} = \frac{1-7847}{\sqrt{9}} = 0.0718$$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.0718 = 0.0484

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b\,\Sigma x$ ……. (ii)

$\Sigma xy = a\,\Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 386428.56 - 307.08 \times 8427}{9 \times 13144.59 - (307.08)^2}$$

$$= \frac{890093.88}{24003.18} = 37.08$$

$a = \bar{y} - b\bar{x} = 936.33 - 37.08 \times 341.12$

$= -328.83$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{12564395 - (-328.83) \times 8427 - 37.08 \times 386428.56}{9-2}}$$

$= 379.22$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{379.22}{\sqrt{2667.01}} = 7.342$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{37.08}{7.342}$$

$= 5.051$

F. Everest Bank Limited (EBL)

Year	x	y	xy	x^2	y^2	$(x-\bar{x})^2$
2000/01	31.56	750	23670.00	996.03	0	729.54
2001/02	32.91	430	14151.30	1083.06	400	658.43
2002/03	29.90	445	13305.50	894.01	400	821.96
2003/04	45.58	680	30994.40	2077.53	400	168.74
2004/05	54.20	870	47154.00	2937.64	0	19.09
2005/06	62.80	1379	86601.20	3943.84	625	17.89
2006/07	78.40	2430	190512.00	6146.56	100	393.22
2007/08	91.82	3132	287580.24	8430.91	400	1105.56
2008/09	99.99	2455	245475.45	998.00	900	1715.61
N = 9	Σx = 527.16	Σy = 12571	Σxy = 939444.09	Σx^2 = 36507.58	Σy^2 = 3225	$\Sigma(x-\bar{x})^2$ = 5630

Where,

x = Earning Per Share (EPS)

y = Market Price Per Share (MPS)

Now, Mean ($\bar{x}$) = $\frac{\Sigma x}{n} = \frac{527.16}{9} = 58.57$

Mean ($\bar{y}$) = $\frac{\Sigma y}{n} = \frac{12571}{9} = 1396.77$

Standard deviation (σ) = $\sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = \sqrt{\frac{5630}{9}} = 25.01$

C.V. = $\frac{\sigma}{\bar{x}} \times 100 = \frac{25.01}{58.57} \times 100\% = 42.70\%$

Calculation of correlation coefficient (r)

$$r = \frac{N\Sigma xy - \Sigma x\Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{9 \times 939444.09 - 527.16 \times 12571}{\sqrt{[9 \times 36507.58 - (527.16)^2][9 \times 25807715 - (1257)^2]}}$$

$$= \frac{1828068.45}{\sqrt{50670.55 \times 74239394}}$$

$= 0.9425$

$r^2 = (r)^2 = (0.9425)^2 = 0.8884\%$

Calculation of standard error of correlation coefficient (S.E.(r))

S.E. (r) = $\frac{1-r^2}{\sqrt{n}} = \frac{1-0.8884}{\sqrt{9}} = 0.0372$

Calculation of probable error of correlation coefficient P.E. (r)

P.E. (r) = 0.6745 × S.E. (r) = 0.6745 × 0.283 = 0.190

Now,

Regression Equation of y on x is

$y = a + bx$ …….. (i)

Where,

x = Independent Variable (EPS)

y = Dependent Variable (MPS)

a = Regression Constant Intercept of the line

b = Regression Coefficient / slope of the Regression line.

According to the least square method, to find out two numerical value 'a' and 'b' we have to solve two normal equation i.e.

$\Sigma y = Na + b \Sigma x$ ……. (ii)

$\Sigma xy = a \Sigma x + bx^2$ ..……. (iii)

By solving these two normal equation we get,

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

$$= \frac{9 \times 9357.90 - 527.16 \times 145}{9 \times 36507.58 - (527.16)^2}$$

$$= \frac{7782.90}{50670.55} = 0.153$$

$$a = \bar{y} - b\bar{x} = 16.11 - 0.153 \times 58.57$$

$$= 7.14$$

Calculation of Standard error of estimate $S.E_e$

$$S.E_e = \frac{\Sigma y^2 - a\Sigma y - b\Sigma xy}{N-2}$$

$$= \sqrt{\frac{3225 - 7.14 \times 145 - 0.153 \times 9358.90}{9-2}}$$

$$= 10.40$$

Calculation of Standard error of regression coefficient (S_b)

$$S_b = \frac{S.Ee}{\sqrt{\Sigma(x - \bar{x})^2}} = \frac{10.40}{\sqrt{5630}} = 0.138$$

Calculation of T-value (t)

$$\text{T-value (t)} = \frac{b}{S_b} = \frac{0.153}{0.138}$$

$$= 1.108$$

Calculation of first Hypothesis about uniformity of DPS of Sample Banks

Banks / Year	SCBNL X_1	NABIL X_2	NIBL X_3	HBL X_4	BOKL X_5	EBL X_6
2000/01	100	40	0	27.5	0	0
2001/02	100	30	0	25	10	20
2002/03	110	50	20	132	5	20
2003/04	110	65	15	0	10	20
2004/05	120	70	12.5	11.58	15	0
2005/06	130	85	20	30	18	25
2006/07	80	100	5	15	20	10
2007/08	80	60	7.50	25	2.11	20
2008/09	50	35	20	12	7.37	30
Total	880	535	100	147.40	87.48	145
Mean	97.77	59.44	11.11	16.37	9.72	16.11

Grand Total (T) $= 880 + 535 + 100 + 147.40 + 87.48 + 145$

$= 1894.88$

Correlation Factor (C.F.) $= \frac{T^2}{N} = \frac{(1894.88)^2}{54} = 66492.04$

Total Sum of Square (TSS) $= \Sigma X_{ij}^2$ - C.F.

$= \Sigma X_1^2 + \Sigma X_2^2 + \Sigma X_3^2 + \Sigma X_4^2 + \Sigma X_5^2 + \Sigma X_6^2$ - C.F.

$= 90800 + 36175 + 1662.5 + 3410.66 + 1232.76 + 3225 - 66492.04$

$= 136505.92 - 66492.04 = 70013.88$

Sum of Square between Sample (SSC)

$$SSC = \frac{\Sigma x_1^2}{N_1} + \frac{(\Sigma x_2)^2}{N_2} + \frac{(\Sigma x_3)^2}{N_3} + \frac{(\Sigma x_4)^2}{N_4} + \frac{(\Sigma x_5)^2}{N_5} + \frac{(\Sigma x_6)^2}{N_6} - \text{C.F.}$$

$$= \frac{(880)^2}{9} + \frac{(535)^2}{9} + \frac{(100)^2}{9} + \frac{(147.40)^2}{9} + \frac{(87.48)^2}{9} + \frac{(145)^2}{9} - 66492.04$$

$= 58066.79$

Sum of square within Samples (SSW) = TSS - SSC

= 700013.88 - 58066.79

= 11947.09

Where, i = Raw

j = Column

Appendix - XV

Calculation of first Hypothesis about uniformity of EPS of Sample Banks

Banks / Year	SCBNL X_1	NABIL X_2	NIBL X_3	HBL X_4	BOKL X_5	EBL X_6
2000/01	126.88	59.26	33.17	93.56	27.97	31.56
2001/02	141.13	55.25	33.59	60.26	2.00	32.91
2002/03	149.30	84.66	39.56	49.45	17.72	29.90
2003/04	143.55	92.61	51.70	49.05	27.50	45.58
2004/05	143.14	105.49	39.50	47.91	30.10	54.20
2005/06	175.84	129.21	59.35	59.24	43.67	62.80
2006/07	167.37	137.08	62.57	60.66	43.50	78.40
2007/08	131.92	108.31	57.87	62.74	59.94	91.82
2008/09	109.99	106.76	37.42	61.90	54.68	99.99
Total	1289.12	878.63	414.73	544.77	307.08	527.16
Mean	143.23	97.62	46.08	60.59	34.12	58.57

Grand Total (T) = 1289.12 + 878.63 + 414.73 + 544.77 + 307.08 + 527.16

= 3961.49

Correlation Factor (C.F.) = $\frac{T^2}{N} = \frac{(3961.49)^2}{54} = 29061.57$

Total Sum of Square (TSS) = ΣX_{ij}^2 - C.F.

= $\Sigma X_1^2 + \Sigma X_2^2 + \Sigma X_3^2 + \Sigma X_4^2 + \Sigma X_5^2 + \Sigma X_6^2$ - C.F.

= 187835.44 + 92048.30 + 20213.28 + 34488.20 + 13144.59 + 36507.58 - 290618.57

= 93618.82

Sum of Square between Sample (SSC)

$$SSC = \frac{\Sigma x_1^2}{N_1} + \frac{(\Sigma x_2)^2}{N_2} + \frac{(\Sigma x_3)^2}{N_3} + \frac{(\Sigma x_4)^2}{N_4} + \frac{(\Sigma x_5)^2}{N_5} + \frac{(\Sigma x_6)^2}{N_6} - C.F.$$

$$= \frac{(1289.12)^2}{9} + \frac{(878.63)^2}{9} + \frac{(414.73)^2}{9} + \frac{(544.77)^2}{9} + \frac{(307.08)^2}{9} + \frac{(527.16)^2}{9} - 290618.57$$

= 363865.79 - 290618.57

= 73247.22

Sum of square within Samples (SSW) = TSS - SSC

= 93618.82 - 73247.22

= 20371.59

Where, i = Raw

j = Column

Appendix - XVI

Calculation of first Hypothesis about uniformity of MPS of Sample Banks

Banks / Year	SCBNL X_1	NABIL X_2	NIBL X_3	HBL X_4	BOKL X_5	EBL X_6
2000/01	2144	1500	1150	1500	850	750
2001/02	1550	735	760	1000	254	430
2002/03	1640	740	795	836	198	445
2003/04	1745	1000	940	840	295	680
2004/05	2345	1505	800	920	430	870
2005/06	3775	2240	1260	1100	850	1379
2006/07	5900	5050	1729	1740	1375	2430
2007/08	6830	5275	2450	1980	2350	3138
2008/09	6010	4899	1388	1760	1825	2455
Total	31939	22944	11272	11676	8427	12571
Mean	3548.78	2549.33	1252.44	1297.33	936.33	1396.78

Grand Total (T) = 31939 + 22944 + 11272 + 11676 + 8427 + 12571

= 98829

$$\text{Correlation Factor (C.F.)} = \frac{T^2}{N} = \frac{(98829)^2}{54} = 180873541.50$$

Total Sum of Square (TSS) = ΣX_{ij}^2 - C.F.

$$= \Sigma X_1^2 + \Sigma X_2^2 + \Sigma X_3^2 + \Sigma X_4^2 + \Sigma X_5^2 + \Sigma X_6^2 - \text{C.F.}$$

$$= 150062511 + 8894776 + 16561810 + 16756496 + 12564395 + 25807715 - 180873541.50$$

$$= 310701703 - 180873541.50$$

$$= 129828161.50$$

Sum of Square between Sample (SSC)

$$\text{SSC} = \frac{\Sigma x_1^2}{N_1} + \frac{(\Sigma x_2)^2}{N_2} + \frac{(\Sigma x_3)^2}{N_3} + \frac{(\Sigma x_4)^2}{N_4} + \frac{(\Sigma x_5)^2}{N_5} + \frac{(\Sigma x_6)^2}{N_6} - \text{C.F.}$$

$$\frac{(31939)^2}{9} + \frac{(22944)^2}{9} + \frac{(11272)^2}{9} + \frac{(11676)^2}{9} + \frac{(8427)^2}{9} + \frac{(12571)^2}{9} - 180873541.50$$

$$= 226550909.70 - 180873541.50$$

$$= 45677368.17$$

Sum of square within Samples (SSW) = TSS - SSC

$$= 129828161.50 - 45677368.17$$

$$= 84150793.33$$

Where, i = Raw

j = Column