A STUDY ON DIVIDEND POLICY OF EVEREST BANK LIMITED AND BANK OF KATHMANDU LIMITED

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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 the Faculty of Management. This thesis is forwarded for examination.

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VIVA- VOCE SHEET

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And found that the thesis to be original work of the student and written according to the prescribed format of Faculty of Management, Tribhuvan University. We recommend the thesis to be accepted as a partial fulfillment of the requirement for Master of Business Studies (MBS).

VIVA-VOCE COMMITTEE

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DECLARATION

I hereby declare that this dissertation entitled **"Dividend Policy Analysis of Commercial Bank of Nepal"** submitted of Office of the Dean, Faculty of Management, Tribhuvan University is my original work done in the form of partial fulfillment of the requirement for the degree of Master of Business Studies (M.B.S.) under the supervision of my respected teacher lecture Dr. Silu Bajracharya, Shanker Dev Campus, Tribhuvan University.

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ABBREVIATION

ANOVA	Analysis of Variance
C.F.	Correction Factor
C.V.	Coefficient of variance
Cov.	Covariance
DPR.	Dividend Payout Ratio
DPS	Dividend per Share
DY	Dividend Yield
EPS	Earning per Share
ETC.	Etcetera
GON	Government of Nepal
I.E.	Identical Equal
LTD.	Limited
MBS	Master of Business Studies
MPS	Market Price per Share
MS	Mean Sum of Square
MVPS	Market Value per Share
NEPSE	Nepal Stock Exchange
NIBL	Nepal Investment Bank Limited
No.	Number
NABIL	Nepal Arab Bank Limited
NWPS	Net Work per Share
P.E.	Probable Error
P/E	Price Earning Ratio
RS	Rupees
S.D.	Standard Deviation
SCBL	Standard Chartered Bank Limited
SEBON	Security Board of Nepal
SEE	Standard Error of Estimate
SSE	Sum of Square Due to Error
SSR	Sum of Square Due to Row
T.U.	Tribhuvan University
TSS.	Total Sum of Square

CHAPTER-I

Introduction

1.1 Background of the Study

Every firm after earning profit either retains the money for further investment or distributes it among the shareholders. The profits that are distributed to the shareholders are known as dividend and the profit that kept in the organization are known as retained earnings. Dividend policy determines the division of earning between payments to stockholders and reinvestment in the firm. Therefore, the decision regarding how much profit to distribute to the stockholders and how much to keep in the organization is the dividend policy.

Dividend policy 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, funds flow, stock price, 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 any organization.

For the development of any country, each and every sector should be strong and capable. Among the economic sector is one of the major governing sectors. Normally each and every measure of the level of development of a country depends on the economic development. For economic development, banks and other financial institutions are playing vital role. So, it there is insufficient economy and financial facilities. The growth of economy development becomes slow. The main objectives of the commercial banks are to earn profit by proper mobilization of resource. Especially commercial banks provide different facilities to the people engaged m trade, commerce and industry. Thence, they are being the means for the uplift of society.

Commercial banks have many functions such as accepting deposits, providing interest culminates m the formation of capital, granting loans that helps remove deficiency of capital, performing agency functions which makes life easier and they also play an

important role m credit creation. When economy is boom, commercial banks increase interest rate which reduces the probability of inflation and increase of depression. They reduce interest rate so the people are interested in investment. Since, the importance of banks is highly appreciated; it needs proper attention to run successfully. They should be established and conducted after analyzing the various factors. Normally, banks ply at a public money that is why people pay their attention whether their money is properly utilized or not and running at profit or loss. The existence of profit to any business firm is the basic factor. If there is no profit a business firms becomes unstable to provide its facilities in the long term. These profits that can be distribute among the owner as dividend as well.

One of the major reasons of public interest to invest money on the shares of bank or others financial institutions is dividend. It refers to the distributed earning to the ordinary shareholders of the firm in turn their investment. Normally, business running at profit is capable to pay it. The amount which is distributed as dividend should be adequate to meet the normal expectation of shareholders.

It is not necessary that all business organization follows the same dividend policy. Dividend policy of different organization may be same or different. But the policy followed by the firm should be suitable for both the shareholders as well as the firm itself. The dividend and retained earning have reciprocal relationship. If the dividend is paid earning decreases while if the profit is retained, shareholders' wealth is minimized.

Nepal is a developing country with very low per capita income. A very small part of the population has spare money whereas a big part is under the line of poverty. Among the small part of population with spare money, only few people are interested to invest the money in business due to the fear of not getting back. So the people who invest money in the business expect return from the money they invest. So the most important tiling to attract the people to business is dividend. People are encouraged to invest in the business is actually running in profit or not. So paying dividend is very important to attract the shareholders who are very important constituent of the business.

But satisfying the shareholders should not only be the objective of firm. Sometimes the firm may get the good investment opportunity in which retained earning is needed. In such a case firm should be involved in maximization of company's wealth. So the dividend policy followed by the firm should be able to satisfy the shareholders as well as maximize the company's wealth. The dividend policy also depends up on the objective of the firm. But the policy should be formulated considering the legal aspects of the country.

The dividend payment is the major decision of the firm which affects the running of the business. Once the company decides to pay dividend, they may establish somewhat permanent divided policy which pay in turn impact on the position of the company in the financial market. What they decide affects the investors and potential investors.

Banks play the very important role in the economic development of the country. Banks are the financial institutions which mobilizes idle saving of people into productive sectors. Banks help to connect the savers and users through the monetary resources. The money is earned from savers to users by banks. The idle saving of the people is transferred to the industries, trades and commerce. The savers are benefited in the form of interest. At the same time, trade commerce and industrial are also benefited by money for business.

1.2 Focus of the Study

Dividend is the major decision which affects the value of firm. So the study is based on dividend policy of the commercial banks in Nepal. There are twenty-six commercial banks in Nepal but it is not possible to cover all the banks in the study. So the only three commercial banks are chosen which will represent all the commercial banks of Nepal. So the study will analysis the financial statement of the chosen banks and whether the dividend policy followed by them is relevant or not.

1.3 Statement of the Problem

Dividend, the most inspiring factor for the investment on shares of the corporation, is an important aspect of financial management. Because the dividend policy determines the division of earnings between payment to stockholders and reinvestment in the firm

to exploit growth opportunities. It affects the value of firm as well as overall financing decision such as financial structure, the flow of funds, corporate liquidity and investors' satisfaction.

The dividend decision, however, is still a crucial as well as controversial area of managerial finance. There is no consensus among the financial scholars on this subject matter and its relation with stock price. Some financial scholars say that stock prices are least influenced by dividend per share while some others believe that its relevance to the stock prices is quite significant. The idea of relevance is vague as well. It is rather hard to define whether dividend per share has positive effect or its effect is negative one.

Dividend is desirable for the shareholders, which inspires them for the further investment on company's shares. But it is found that there is no satisfactory result about dividend decision of commercial banks in Nepal. Likewise, dividend distribution does not match with the earnings of the commercial banks, there does not exist a proper relationship between dividend and quoted market price of share. Similarly, commercial banks with lower returns record stable (rigid) price of share and banks making sound returns do not rigid in share price.

It is because, among the various reasons, the government rules and regulations, ownership patterns, attitudes of management, forms of management may be the partial causes of such a situation. In practice, every firm follows some kinds of dividend policy and there is no unique dividend policy which is appropriate (suitable) for all the firms. So they follow different policies. In general, it is assumed that there is relationship between dividend and stock price but the relation in under developed country like Nepal is not yet known. So the relation between dividend and stock prices established by much finance scholars needs to be tested in the context of Nepal.

In the Nepalese context, the companies listed in NEPSE are not seen so serious regarding dividend decisions, since most of them do not have any consistent and obvious (clear cut) policy on dividend distribution. In connection to Nepalese public enterprises, M.K. Shrestha remarks that dividend is still considered as the unintended strategy or the non payable obligation at a time when Nepalese government is not in a

position to impose the public limited companies to pay a minimum rate of dividend on the equity capital contributed. Some Nepalese acts like Nepal Company Act 2053, Nepal Commercial Bank Act 2031 and other regulating acts are still silent regarding dividend distribution. So different companies are adopting different dividend decisions inconsistently. There is a common trend of deciding the dividend by the management of companies instead of by shareholders meeting.

This study raises some issues to be examined which are stated below:

(a) Whether the problem is attitude to pay dividend or the ability to pay dividend.
(b) Whether there is uniformity of dividend distribution or not.
(c) Whether dividend decision affects the market price of shares differently in different banks or not.
(d) Whether or not the prevailing dividend policy influences the corporate liquidity position.
(e) Whether changing dividend policy or payout ratio increase the value of stock or not.
(f) What is the relationship between dividend with other key variables like earning per share, market price per share, book value per share, net profit and net worth of the banks?
(g) What are the prevailing practices of the banks regarding their dividends?

1.4 Objectives of the Study

The objective of a dividend decision should be to maximize the shareholders' return so that the value of his investment is maximized. This study is primarily undertaken to focus on the prevalent dividend policies and to suggest the direction of future endeavors for the overall healthier development of the share market and also the possible impact of such endeavors on the share market in Nepal.

The main objectives of this study are as follows:

a. To study whether the commercial banks are following the suitable dividend policy or not.
b. To compare the dividend policy followed by different commercial banks chooses.

c. To study the relationship of dividend policy with various financial indicators like EPS, DPS, MPS, DPR, net worth, net profit and book value of share.

d. To provide suggestions that they can follow a better policy.

1.5 Significance of the Study

Due to excess liquidity and lack of investment opportunities in the capital market, nowadays people are very much interested and attracted to invest in shares for getting higher returns. When any new company issues (floats) shares through capital markets, very big congregation gathers to apply for owner's certificate. It reveals that people have expectation on higher return for investing in shares. So the dividend decision is one of the most important decisions of financial management. It is an effective tool (way) to attract new investors, maintain present investors and controlling position of the firm. In capital market, basically, the return can be earned in the following two ways:

(i) By means of dividend

(ii) By capital gains i.e., increase in share price.

Having lack of adequate knowledge, the people are haphazardly investing in shares. It shows that there is an extreme necessity to establish clear conception about the return that yields from investing in securities.

In the Nepalese perspective, we find that there exist almost none of the companies adopting consistent dividend policy. There may be many reasons behind it. But there is not sufficient study conducted in this regard. So, I have made this humble attempt to contribute to this aspect. Therefore, considering all these facts, the study is undertaken which will help to meet deficiency of the literature relating to dividend decision and factors affecting the dividend policy. So the study of dividend policy is of considerable importance.

I believe that so many persons and parties such as shareholders, management of banks, financial institutions, general public (depositors, prospective customers, investors etc.) and other policy making bodies which are concerned with banking (especially SCBL, NABIL and NIBL Bank Ltd.) business will be benefited from this

study. It is also believed that it will provide valuable inputs for future research scholars.

1.6 Limitations of the Study

There are limitations that weaken the generalizations – e.g. inadequate coverage of industries, shortage of time, reliability of statistical tools used and other variables. This study is simply a partial requirement of MBS program. So, this study will be limited by the following:

a) The data collected depends upon the accuracy of the annual reports of banks.

b) The study period only covers five fiscal years.

c) Due to insufficiency of time, only three joint venture banks are taken as samples.

e) There are many factors that affect dividend decisions and valuation of the firm. However, only those factors related with dividend will be considered in the study

1.7 Organization of the Study

The report will be presented in five chapters which are us as follows:

Chapters 1 Introduction

Chapters 2 Review of literature

Chapters 3 Research Methodology

Chapters 4 Presentation & Analysis of data

Chapters 5 Summary, conclusion and recommendation

The first chapter contains short introduction of the research. The outline of the research is presented in the chapter. The whole research will be based on die introduction chapter.

Chapter second deals with review of literature. It consists a discussion on the conceptual framework and review of various studies (i.e. various books, journals, other thesis etc) on dividend policy.

In the third chapter, the methods used in the research to evaluate dividend practices of pint venture banks 111 Nepal are described. It consists of research design, sour5ce of data, population and sample, statistical and financial tools.

In the fourth chapter, the collected data are analyzed using various statistical and financial tools. This is the main part of the study.

In the last chapter, the major findings, summary, conclusion and recommendation of the study are included and it states suggestive frame work of the study.

CHAPTER–II

Review of Literature

This research aims to analyze the dividend policy and practices of commercial banks especially three joint venture banks viz. Standard Chartered Bank Ltd, Nabil Bank Ltd & Nepal Investment Bank Ltd. For this purpose, it is helpful to review related literatures in this concerned area which will help to get clear ideas, opinions and other concepts.

'What others have said? What others have done? And what others have written?' all these and other related questions are reviewed, which has provided useful inputs in this research work. This chapter emphasizes on the literatures which are concerned with this connection. Therefore, in this chapter, conceptual frameworks given by different authors and intellectuals on this area, books, journals, research works, and previous thesis related to dividend and dividend policies and practices are reviewed. Moreover, rules regarding to dividend policy are reviewed and an attempt has been made to present them properly.

2.2 Conceptual Framework

Dividend decision is an integral part of financial management decision. It is in the sense that the firm has to choose between distributing the profits to the shareholders and reinvesting it to finance the business. The important aspect of dividend policy is to determine the amount of earnings to be distributed to shareholders in return to their investment and the amount to be retained in the firm. It affects the financial structure, the flow of funds, corporate liquidity and investor's attitudes. It is a matter of interest for all the stakeholders. Thus, it is one of the central decision area related to policies seeking to maximize the value of firm's common stock.

Iqbal Mathur defines the dividend and dividend policy as: "Dividends refer to that portion of retained earnings that is paid to stockholders while dividend policy refers to the policy or guidelines that management uses in establishing the portion of retained earnings that is to be paid in dividends" (Mathur, 1979: 297).

The policy of a company in the allocation of its profits between distribution to shareholders as dividend and retention for its investment is known as dividend policy. All aspects and

questions related to payment of dividend are contained in a dividend policy. Generally, dividends are paid in the form of cash, which reduces the cash balance of the company. There is a reciprocal relationship between retained earnings and cash dividends. If retained earning is kept more by the company, less will be the dividend and vice - versa. The decision depends upon the objective of the management for capital maximization.

What and how much is desirable to pay dividend, is always a matter of dispute because shareholders expect higher dividend from company, as it tends to increase their current wealth whereas retention of earning is desirable for the growth of firm. These two objectives of the dividend policy are always in conflict. There is not yet consensus on whether the firms should follow certain pattern to distribute dividend and retain earnings. However, there is different decision models developed to analyze the situation and reach a decision. These decision models are conflicting and consider the different aspects of the firm. One school of thought argues that dividend payment has no impact on valuation of a firm whereas other theories of dividend decision argues dividend to be active variable in valuation of firm. These different models on the relationship between dividend and the value of the firm will be discussed later on in this chapter in detail.

2.2.1 Concept of Dividend

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

(a) Discretionary concept

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

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

Even in the context of Nepalese corporations, the decision regarding the payment of dividend is purely vested in the board of directors of corporation, and it is also insisted by the

corporate acts. There are not any legal rights to demand any part of profit in the form of dividends by the ordinary shareholders because profits are the property of the corporations and not of individual shareholders.

(b) Pro-Rata distribution concept

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

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

(c) Residual concept

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

Under this concept, dividend policy is a residual firm investment policy and dividends are paid only after financing all investment opportunities. So, dividend policy is totally passive in nature. "When we treat dividend policy as strictly a financing decision, the payment of cash dividends is a passive residual"(Van Horne, 1993: 327).

(d) Liability Concept

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

2.1.2 Conflicting Theories on Dividends

Basically, there are two schools of thoughts on dividend policy which have been expressed in the theoretical literature of finance. One school, associated with Myron Gordon and John Lintner, holds the view that capital gains expected to result from earnings retention are riskier than are dividend expectations. In other words, dividend yield is less risky than the expected capital gain. It also says that investors give more emphasis to the present dividend than future capital gain.

Investors are not indifferent between current dividend and retention of earnings with the prospects of future dividends, capital gain and both. Accordingly, these theorists suggest that the earnings of a firm with a low payout ratio are typically capitalized at higher rates than the earnings of a high payout firm, other things held constant. Another school of thought, associated with Merton Miller and Franco Modigliani, holds the view that investors are basically indifferent to returns in the form of current dividends or retention of earnings with the prospects of future dividends, capital gain. When firms raise or lower the dividends, their stock prices tend to rise or fall in like manner. They argue that, given the investment decision of the firm, the value of firm is determined safely by the firms earning power and that the manner in which the earnings split between dividends and retained earnings does not affect the value of firm. In other words, when investment decision of the firm is given, dividend decision, the split of earnings between dividends and retained earnings, is of no significance in determining the value of firm.

2.1.3 Types of Dividend

Though cash dividend is assumed to be the most popular form of dividend, corporation needs to follow various types of dividend according to the objectives and policies, which they implement. "The type of dividend that corporations follow is partly a matter of attitude of directors and partly a matter of the various circumstances and financial constraints that bound corporate plans and policies" (Shrestha, 1980:670).

According to the changing needs of corporations, dividend is being distributed in several forms viz. cash dividend, stock dividend (bonus share issue), scrip dividend, property dividend, optional dividend and bond dividend. But in Nepal and India only two types of dividend namely cash dividend and stock dividend are being practiced.

i. Cash Dividend

Cash dividend is the form of dividend, which is distributed to shareholders in cash out of earnings of company. The cash account and the reserves account of a company will be reduced when the cash dividend is paid. Thus, both the total assets and the net worth of the company are reduced when the cash dividend is distributed. The market price of the share drops in most cases by the amount of the cash dividend distributed. (Hastings, 1996:370).

So the companies should wisely make decisions regarding payment of cash dividend.

ii. Stock Dividend / Bonus Share

A stock dividend represents the distribution of shares in addition to the cash dividend to the existing shareholders. This has the effect of increment in the number of outstanding shares of the company. The declaration of the bonus shares will increase the paid-up share capital and reduce the reserve and surplus of the company. The total net worth is not affected by the bonus issue. In fact, it represents nothing more than re-capitalization of the owners' equity portion, i.e., the reserve and surplus. It is simply an accounting transfer from retained earning to capital stock.

iii. Scrip Dividend

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 notes is called a 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 dividends 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.

iv. 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. Companies own products and the securities of subsidiaries are the examples that have been paid as property dividend.

v. 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" (Waring, 1931: 404).

If the cash dividend is subject to income taxes over and above the limit he prefers to have stock dividend.

vi. 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 far in this study, the term dividend generally refers to cash dividend.

2.1.4 Theories of Dividend

2.1.4.1 Residual Theory of Dividends

"The residual dividend policy suggests that dividend paid by the firm should be viewed as a residual amount left after all acceptable investment opportunities have been undertaken" (Lawrance, 1994: 537.17).

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

sources (i.e. issuing new shares). It is because the retained earning or internally generated fund does not imply any flotation cost as in the external sources by selling equity shares.

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

(i) Company's investment opportunities.

(ii) Availability of internally generated funds i.e., retained earnings.

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

2.1.4.2 Stability of Dividends

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

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

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

1. Constant Dividend per Share

According to this form of stable dividend policy, a company follows a policy of paying a certain fixed amount per share as dividend. The fixed dividend amount would be paid year after year, irrespective of fluctuation in the earnings. In other words, fluctuations in earnings would not affect the dividend payment. In fact, when a company follows such a dividend policy it will pay dividends to the shareholders even when it suffers loss. It should be clearly noted that this policy does not imply that the dividend per share or dividend rate will never be increase.

The dividend per share is increased over the years when the company reaches new levels of earnings and expects to maintain it. Of course, if the increase is expected to be temporary, the annual dividend per share is not changed and remains at the existing level. It is easy to follow this policy when earnings are stable. If the earning pattern of a company shows wide fluctuations, it is difficult to maintain such policy. Investors who have dividends as the only source of their income prefer the constant dividend policy.

2. Constant Payout Ratio

Constant / target payout ratio is a form of stable dividend policy followed by some companies. The term payout ratio refers to the ratio of dividend to earnings or the percentage share of earnings used to pay dividend. With constant / target payout ratio, a firm pays a

constant percentage of net earnings as dividend to the shareholders. In other words, a stable dividend payout ratio implies that the percentage of earnings paid out each year is fixed. Accordingly, amount of dividend will fluctuate in direct proportion to earnings and are likely to be highly volatile in the wake of wide fluctuations in the earrings of the company.

This policy is related to a company's ability to pay dividends. If the company incurs loss, no dividends shall be paid regardless of the desires of shareholders. Internal financing with retained earnings is automatic when this policy is followed. At any given payout ratio the amount of dividends and the additions to retained earnings increase with increasing earnings and decrease with decreasing earnings.

This policy simplifies the dividend decision, and has the advantage of protecting a company against over and under payment of dividend. It ensures that dividends are paid when profits are earned, and avoided when it incurs loss.

3. Stable Rupee Dividend Plus Extra Dividend (low regular dividend plus extras)

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

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

2.1.5 Factors Influencing Dividend Policy

Dividend policy, one of the major decisions of managerial finance, determines that what percentage of the earnings of the firm is distributed to its shareholders and what percentage of the earnings is retained in the firm which is desirous for the growth of the firm. Dividends are desirable to its shareholders because it tends to increase their current wealth whereas retained earnings are desirable for the firm to exploit investment opportunities as the internal source of financing. So, in order to develop a long term dividend policy, the directors should aim at bringing a balance between the desire of shareholders and the needs of the company. The

firm's decision regarding the amount of earnings to be distributed as dividends depends on a number of factors.

The factors which restrict the firm's ability to declare and pay dividends are discussed below:

(1) Legal Restrictions

(a) The Surplus Rule

According to surplus rule, dividend should be paid only out of profit. If there is no surplus or profits, dividend can't be legally declared.

(b) The Insolvency Rule

The insolvency rule states that dividends can't be paid if company is insolvent or if a payment would result in insolvency. (i.e when liabilities exceed assets.)

(c) Capital Impairment Rule

According to this rule, dividend should not be paid if a firm's capital has been impaired or if dividend payment will cause capital to become impaired. It means dividends should not be paid out of paid - up capital.

(2) Bond Indenture

Debt contracts generally restrict dividend payments to earning generated after the loan is granted. Also, debt contracts often stipulate that no dividends can be paid unless the current ratio, the times interest-earned ratio and other safety ratios exceed stated minimums.

(3) Possibility of Accelerating or Delaying Projects

The ability to accelerate or postpone project will permit more flexibility in a firm's dividend policy.

(4) Alternative Sources of Capital

(i) Cost of Selling New Stock

If a firm needs to finance a given level of investment, it can obtain equity by retaining earnings or by selling new common stock. If flotation costs are high, it is better to finance through retention than through sale of new common stock. On the other hand, if these costs are low, dividend policy will be less important. Flotation costs differ among firms. For example, they are generally higher for small firms. Hence, the importance of these costs, and consequently, the degree of flexibility in setting a dividend policy, varies among firms.

(ii) Ability to Substitute Debt for Equity

A firm can finance a given level of investment with either debt or equity. As we have seen, if flotation costs are low, a more flexible dividend policy may be followed because equity can be raised by retaining earnings or by selling new stock. A similar situation holds for debt policy. If the firm is willing to adjust its debt ratio, it can maintain a constant amount of dividend by using a variable debt ratio.

(5) Need to Repay Debt

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

(6) Access to the Capital Market

All the firms do not have equal access to capital markets. A firm which has not sufficient liquidity can pay dividends, if it is able to raise debt or equity in the capital market. A firm which is larger, well established and has a record of profitability will not find much difficulty in rising of funds in the capital market.

Easy accessibility to the capital market provides flexibility to the management in paying dividends as well as in meeting the corporate obligations.

(7) Rate of Assets Expansion

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

(8) Internal Investment Opportunity

It is apparent that opportunities to invest are major consideration in setting dividend policy. Putting other considerations aside, when the firm has opportunities to earn returns greater

than those available to shareholders outside the firm, retention and reinvestment are appropriate.

(9) Financial Needs of the Company

It is another consideration which also influences on the establishment of an appropriate dividend policy. Mature companies that have few investment opportunities may generally have high payout ratios. On the other hand, growth companies may have low payout ratios.

They are continuously in need of funds to finance their fast growing fixed assets. The distribution of earnings will reduce the funds of the company.

(10) Profit Rate

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

(11) Tax Position of the Corporations

It is a factor which affects the firm's dividend decision. Possible penalties for excess accumulation of retained earnings may induce higher payout ratios.

(12) Stockholders' Expectations

In case of widely-held company, the number of shareholders is very large and they may have conflicting interests and diverse desires regarding dividends and capital gains. Therefore, it is not easy to reconcile these conflicting interests of the various shareholders group by adopting a dividend policy which equally satisfies all shareholders.

Generally, the company should adopt a dividend policy which serves the purpose of the dominating group. But, it does not totally neglect the desires of other groups.

In a closely-held company, the body of shareholders is small and homogeneous group, so management usually knows the expectations of its shareholders and may adopt a dividend policy, which satisfies all shareholders. If most of the stockholders are in high tax brackets and have a preference for capital gains to current dividend incomes the company can establish a low dividend payout or no dividends and retains the earnings within the company.

(13) Tax of Stockholders

The tax position of the corporation's owners greatly influences the desire for dividends. For example, a corporation closely held by a few taxpayers 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.

(14) Stability of Earnings

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

(15) Control

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

Under this circumstance, the payment of dividends may be withheld and earnings may be retained to finance the firm's investment opportunities.

(16) Liquidity

The liquidity of a company is a prime consideration in many dividends decision. Although a firm may have sufficient retained earnings to declare dividend, but if they are invested in physical assets cash may not be available to make dividend payments. Thus the company must have adequate cash available as well as retained earning to pay dividends.

As dividends represent cash outflow, the greater the cash position and overall liquidity of a company, the greater is its ability to pay dividend and vice-versa. A company that is growing and profitable may not be liquidated, for its funds may go into fixed assets and permanent current assets.

(17) Inflation

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

2.1.6 Legal Provisions Regarding Dividend Practices

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

According to Corporation Act, corporations must set aside a certain part of profit as reserves before the declaration of dividend. Moreover, corporations have to separate the tax provisions prior to dividend declaration. Likewise, Commercial Bank Act 2031 has also made some provisions for distributing dividend. Section 18 of this act states about the restrictions for dividend distribution. According to this section, before providing the whole expenses by the bank for preliminary expenses, loss incurred in last year, capital reserve, risk beard fund reserve fund, the bank shall not declare and distribute the dividend to shareholders.

Similarly, Company Act 1997 makes some legal provisions regarding dividend distributions, which are discussed below.

According to this act, board of directors can fix dividend payout rate but such rate should be reposed, first for the discussion and approval in the annual general meeting of shareholders, the general meeting can reduce the rate determined by board of directors but can't increase.

Likewise, some other legal provisions are:
Section (2) (m) states that bonus shares mean shares issued in the form of additional shares to shareholders by capitalizing the surplus from the profits on the reserve fund of a company. The term also denotes an increase in the paid up values of the shares after capitalizing surplus or reserve funds.

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

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

Section (140): Dividends and sub-sections of this section are as follows:
(1) Except in the following circumstances, dividend shall be distributed among the shareholders within 45 days from the date of decision to distribute them.
(a) In case any law forbids, the distribution of dividends.
(b) In case the right to dividend is disputed.
(c) In case dividends can't be distributed within the time limit mentioned above owing to circumstances beyond anyone's control and without any fault on the part of the company.
(2) In case dividends are not distributed within the time limit mentioned in subsection (1) this shall be done by adding interest at the prescribed rate.
(3) Only the person whose name stands registered in the register of existing shareholders at the time of declaring the dividend shall be entitled to it.

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

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

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

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

(3) Dividend rate will not be less than the interest rate on fixed deposit of commercial bank of government owned. Incase of insufficiency of profit mount to distribute dividend in above mentioned rate, concerned corporation should send proposal of new distribution rate to the Finance Ministry through liaison ministry and should do what so ever decision is given there of.

(4) Those corporations operating in monopoly situation should repay all amounts of profits to the government except the amount of bonus, tax and the amount needed to expand and develop the business. The amount separated for the expansion and development of business will not be more than 20 percent of profit of the year and this amount will not be more than total paid up capital.

The amount so separated should all be paid as dividend if it is not used within 3 years.

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

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

(7) Ministry of Finance will make necessary arrangements regarding fixation of dividend percentage coordinating all concerned corporations and ministries.

2.2 Review of Related Studies

In this section, an attempt has been made to review of the major studies concerning dividends and stock prices and management views on dividend policy.

2.2.1 Lintner's Study

Lintner (1956) conducted a study on corporate dividend policy in the American context . He investigated a partial adjustment model as he tested the dividend patterns of 28 companies. According to John Lintner's study, dividends are 'sticky' in the sense that they are slow to change and lay behind shifts in earnings by one, or more periods. According to J. Lintner, dividend is a function of earnings of that year, existing dividend rate, target payout ratio and speed of adjustment. The followings were the basic objectives of the study.

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

To determine the factors existing most actively into dividends.

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

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

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

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

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

Where,

DIV_t^*= Firm's desired payment

EPS_t= earnings

P= Targeted payout ratio

a = constant relating to dividend growth

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

The major findings of this study were as follows:

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

II. In order to modify the pattern of dividend, investment opportunities, liquidity position, funds flows are not considered.

Firms generally have target pay out ratios in view while determining change in divided rate or dividend per share. (Linter, 1956: 99-113, extracted from, “Katuwal, 2001:30-31”)

2.2.2 Modigliani and Miller Study

Modigliani and Miller (1961) conducted a study on the irrelevance of dividend. This is popularly known as MM approach. It is sometimes termed as Dividend Irrelevance Model.

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

In other words, the division of earnings between dividend and retained earning is irrelevant from shareholders viewpoint. In general, the argument supporting the irrelevance of dividend valuation is that dividend policy of the firm is a part of its financing decisions. As a part of the financing decision of the firm, the dividend policy of the firm is a residual decision and dividends are passive residual.

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

I. The firms operate in perfect capital market where all investors are rational. Information is freely available to all. Securities are infinitely divisible and no investor is large enough to influence the market price of securities.

II. There are no flotation costs. The securities can be purchased and sold without payment of any commission or brokerage etc.

III. Taxes do not exist.

IV. The firm has a definite (fixed) investment policy, which is not subject to change.

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

M-M provide the proof in support of their argument in the following manner.

Step-One

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

Symbolically,

$$P_O = \frac{D_1 + P_1}{1 + K_e}$$

Where,

P_O = Current market price of a share (market price at the beginning or at the Zero period.)

K_e = the cost of equity capital (Assumed constant)

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

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

Step-Two

Multiply both sides of equation (1) by the number of shares outstanding (n) to obtain the total value of the firm if no new financing exists.

Symbolically,

$$np_c = \frac{n(D_1 + P_1)}{1 + K_e}$$

Where,

n = no. of outstanding shares at zero period.

Step-Three

If the firm issues (sells) number of new shares (m) to finance the new investment needs of the fund at a price of P1, the value of the firm at time zero will be:

Symbolically,

$$np_c = \frac{n(D_1 + P_1) + (nP_1 + mP_1)}{1 + K_e} \quad \text{.....2}$$

$$np_c = \frac{nD_1 + P_1 + nP_1 + mP_1}{1 + K_e} \quad \text{.....3}$$

Where,

n = no. of shares at the beginning (no. of outstanding shares at zero period.)

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

Step-Four

The investment proposals of a firm, in a given period of time can be financed, either by retained earning or the issuance of new shares or both. Thus the amount of new issued will be:

$mp_1 = I – (E – nD_1)$

Or, $mp_1 = I – E + nD_1$ ……. 4

Where,

I = Investment needs

E = Earning available.

Step-Five

By substituting the value of mp1 from equation (4) to equation (3), we get,

$$np_o = \frac{nD_1 + (n+m)p_1 - I + E - nD_1}{1+K_e}$$

$$np_o = \frac{p_1(n+m) - I + E}{1+K_e} \text{ ……..5}$$

Step-Six

Conclusions: Since dividend does not appear directly in expression and E, I, (n+m) p_1 and k_e are assumed to be independent of dividend. In other words, MM concludes that dividend policy is irrelevant and dividend policy has no effect in the value of the firm. A firm that pays dividends will have to raise funds externally to finance its investment plans. MM hold that when the firm pays dividends, external financing offsets its advantage.

It does not seem so relevant to apply MM approach in Nepalese Context because when we apply this approach, the assumptions supposed by MM are significantly deviated. In Nepal, we are unable to find the rational investors as well as perfect capital market, which are considered by MM. It does not seem so sound to neglect the flotation cost, transaction cost and tax effect on capital gain as neglected by MM. Arbitrage arguments as explained by MM applies only when there are very sensitive investors and which are lacking in Nepal. A conscious investor always finds different between dividend and retained earning, and generally, Nepalese investors also prefer dividends more than retained earnings, when dividend is distributed. Thus, MM proposition is not relevant in the case of Nepal (Miller and Modigliani, 1961: 411-433, extracted from, “Panday, 1989:287”).

2.2.3 Gordon's Study

Myron Gordon (1962) conducted a study on the stock valuation using the dividend capitalization approach. Gordon concludes that dividend policy does affect the value of shares even when the return on investment and required rate of return are equal. He explains that investors are not indifferent between current dividend and retention of earnings with the prospect of future dividends, capital gain and both. The conclusion of this study is that investors have a strong preference for present dividends to future capital gains under the condition of uncertainty. It is assumed that current dividend is less risky than the expected capital gain. His argument stresses that an increase in dividend payout ratio leads to increase in the stock price for the reason that investors consider the dividend yield (D1/Po) is less risky than the expected capital gain. Gordon's model is also described as "a bird in hand argument". It supports the arguments which are popularly known as a bird in hand is worth two in the bush. What is available at present is preferable than what may be available in the future. That is to say current dividends are considered certain and risk less. So it is preferred by rational investors as compared to deferred dividend in future. The future is uncertain. The investors would naturally like to avoid uncertainty. So the current dividends are given more weight than expected future dividend by the investors. So the value per share increases if dividend payout ratio is increasing. This means there exist positive relationship between the amount of dividend and stock prices.

Basic assumptions of this model are as follows:

i. The firm uses equity capital only.

ii. Internal rate of return (r) and cost of capital (ke) are constant.

iii. The firm and its stream of earnings are perpetual.

iv. There are no taxes on corporate income.

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

vi. Ke' must be greater than g (=br) to get meaningful value.

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

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

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

Where,

P= Price of share / market value per share

E= Earning per share

b= Retention ratio / percentage of retained earning

1-b= Dividend payout ratio (i.e., percentage of earning distributed As dividend)

ke= Capitalization rate / cost of capital

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

1st Case: Growth Firms (r > k)

In the case of growth firm, the value of a share will increase as the retention ratio (b) increases and the value of a share will decrease as the retention ratio (b) decreases. I.e. high dividend corresponding to earnings leads to decrease in share prices and low dividend corresponding to earning leads to increase in share prices. So, dividends and stock prices are negatively correlated in growth firm i.e., r > k firm.

2nd Case: Normal Firms: (r=k)

Dividend payout ratio does not affect the value of share in normal firm. In other words, share value remains constant regardless of changes in dividend policies. It means dividend and stock price are free from each other in normal firm i.e., r = k firm.

3rd Case: Decline Firms: (r<k)

In case of declining firms, share price tends to enhance with increase in payout ratio, 1-b, or decrease in retention ratio, b. So, dividends and stock prices are positively correlated with each other in decline firm i.e., r < k firm (Gordon. M.J,1962: 264-272, extracted from, “Panday, 1989:287”)

2.2.4 Friend and Puckett's Study

Irwin Friend and Marshall Puckett (1964) conducted a study on the relationship between dividends and stock prices. They used the regression analysis on the data of 110 firms from five industry samples, viz., chemicals (n=20), electronics (n=20), electric utilities (n=25),

foods (n=25), and steels (n=20), in each of two years, 1956 and 1958. The industries were selected to permit a distinction to be made between the results for growth and non-growth industries and to provide a basis for comparison with results by other authors for earlier years. Both cyclical and non-cyclical industries were covered. The periods covered include a boom year for the economy when stock prices leveled off after a substantial rise (1956) and a somewhat depressed year for the economy when stock prices, however, rose strongly (1958).

They used two-regression model of price function and dividend supply function. In price function, dividends, retained earnings & price earnings ratio are independent variables, whereas, earnings, last year's dividends and price earning ratio are independent variables in dividend supply function. Symbolically, their price function and dividend supply function can be written as:

Price function, $Pt=a+b\ Dt+c\ Rt+ d\ (E/P)\ t-1$

Where,

Pt = Per share price at time t

Dt = Dividends at time t

Rt = Retained earnings at time t

(E/P) t-1 = Lagged earnings price ratio

And, Dividend supply function,

$Dt= e + f\ Et + g\ D\ t-1 + h\ (E/P)\ t-1$

Where,

Et = Earnings per share at time t

P t-1= Last year dividend

The followings were the basic assumptions of their study:

1. Dividends do react to year-to-year fluctuations in earnings.
2. Price does not contain speculative components.
3. Earnings fluctuations may not sum zero over the sample.

The regression $Pt = a + b\ Dt + c\ Rt$ presents the usual simple linear relationships between average prices and dividends and retained earnings to show with the data. They found the customary strong dividend and relatively weak retained earnings effect in three of five

industries i.e., chemicals, foods, and steels. By adding lagged earnings price ratio to the above equation, they got the following results.

$Pt = a + b\ Dt + c\ Rt + d\ (E/P)\ t-1$

They tested this equation and found the following results.

Dividends have a predominant influence on stock prices in the same three out of five industries but the differences between the dividends and retained earnings coefficients were not quite so marked as in the first set of regressions. The dividends and retained earnings coefficients were closer to each other for all industries in both years except for steels in 1956, and the correlations are higher, again except for steels.

They also calculated the dividend supply equation, i.e., $Dt = e + f\ Et + g\ D\ t-1 + h\ (E/P)\ t-1$ and derived price equation for four industry groups in 1958. The derived price equation show no significant changes from those obtained from the single equation approach as explained above, reflecting the fact that stock price, or more accurately the price earnings ratio, does not seem to have a significant effect on dividend payout. On the other hand, they noted that, in three of the four cases tested, the retained earnings effect is increased relatively.

Moreover, their result suggested that price effects on dividend supply are probably not a serious source of bias in the customary derivation of dividend and retained earnings effects on stock prices, though such a bias might be masked if the distributing effects of short run income movements are sufficiently great.

Further, they used lagged price as a variable instead of lagged earnings price ratio. They found that retained earnings received greater relative weight than dividends in the majority of the cases. The only exceptions were steels and foods in 1958. Chemicals, electronics, and utilities were considered as growth industries and the retained earnings effect was larger than the dividend effect for both years covered. For the other two industries (steels and foods) there no longer seems to be any significant systematic differences between the retained earnings and dividend coefficients.

Similarly, they tested the regression of $Pt = a + b\ Dt + c\ Rt$ by using normalized earnings again. They obtained normalized retained earnings by subtracting dividends from normalized earnings. That normalization procedure was based on the period 1950-61. Again, they added

prior year's normalized earnings price variable and they compared the result. Comparing the result, they found that there was significant role of normalized earnings and retained earnings but effects of normalized price earnings ratio were constant. After examining the later equation, they found that the difference between dividend and retained earnings coefficients disappeared. Lastly, they come to know a conclusion that management might be able to increase prices somewhat by raising dividends in foods and steel industries.

At last, Friend and Puckett found a conclusion that, it is possible that management might be able, at least in some measure, to increase stock prices in non-growth industries by raising dividends, and in growth industries by greater retention, i.e. smaller (lower) dividends.

2.2.5 Walter's Study

James E. Walter (1966) conducted a study on dividend and stock prices. He proposed a model for share valuation. According to him, the dividend policy of the firm affects the value of the shares. So, the dividends are relevant. He argues that the choice of dividend policies always affect the value of enterprise.

His study shows clearly the importance of the relationship between internal rate of return (R) and its cost of capital (K) in determining the dividend policy.

The assumptions of the Walter's model are as follows:

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

- The firm has a perpetual or infinite life.

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

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

Where,

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

DPS = Dividend per Share

EPS = Earning Per Share

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

ke = cost of capital / capitalization rate

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

Growth Firm (r > k)

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

Normal Firm (r = k)

If the internal rate of return is equal to cost of capital, the dividend payout does not affect the value of share, i.e. dividends are indifferent from stock prices. In other words, there is no role of dividends on stock prices. Such a firm can be called as a normal firm. Whether the earnings are retained or distributed as dividend, it is a matter of indifference for a normal firm. The market price of share will remain constant for different dividend payout ratio from zero to 100. Thus, there is no unique optimum payout ratio for a normal firm. One dividend

policy is good as other and the market value per share is not affected by the payout ratio when r = k.

Declining Firm (r < k)

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

Criticism of Walter's Model

(i) No external financing

This model is based on assumption that the investment opportunities of the firm are financed by retained earnings finance the investment opportunities of the firm only no external financing i.e., debt or equity is used for the purpose. When such a situation exist either the firm's investment or its dividend policy or both will be sub-optimum.

(ii) Constant rate of return (R) and opportunity cost of capital (K)

This model assumes that rate of return (R) and opportunity cost of capital or discount rate (k) is constant. In fact, rate of return (R) changes with increase and decrease of investment. i.e., R decreases as more investment occurs and cost of capital (k) changes directly with the risk borne by the firms. (Walter, 1966: 29-41, extracted from, “Panday, 1989:280”).

2.2.6 Van Horne and Donald's Study

Van Horne and Mc-Donald (1971) conducted a study on dividend policy and new equity financing. The purpose of this study was to investigate the combined effect of dividend policy and new equity financing decision on the market value of the firm's common stocks. Empirical tests are performed with year end 1968 cross sections for two industries, using a well-known valuation model. For there investigation, they employed two samples of firms viz. the 86 electric utilities in the continental U.S. which are included on the COMPUSTAT utility data tape, and 39 companies in the electronics and electric component industries as listed on the COMPUSTAT industrial data tape in 1968.

They performed empirical study by testing two regressions for the electric utilities and one regression model for electronics and electronic components industry. They concluded that for electric utility firms in 1968, share value was not adversely affected by new equity financing in the presence of cash dividends, except for those firms in the highest new issue group and it made new equity a more costly form of financing than the retention of earnings. They also indicated that the "Cost" disadvantages of new equity issues relatives to retained earnings widens as relatively large amounts of new equity are raised, so that the payment of dividends through excessive equity financing reduces share prices. For forms in the electronics-electronic component industry, a significant relationship between new equity financing and value was not demonstrated.

2.2.7 Chawla and Srinivasan's Study

Deepak Chawla and G.Srinivasan (1987) conducted a study on the impact of dividend and retention on share price. They selected 18 chemicals and 13 sugar companies and estimated cross-sectional relationship for the years 1969 and 1973. They collected the required data from the official directory of Bombay stock exchange. They used two stages least square technique for estimation. They also used lagged, earnings price ratio instead of lagged price earnings ratio, i.e. P/E (t-1).

The followings were the prime objectives of their study.

(i) To test the hypothesis of dividend and retained earnings.

(ii) To estimate a model to explain share price, dividend and retained earnings relationship.

(iii) To examine the structural changes in estimated relations over time.

In order to achieve (attain) these objectives, they used simultaneous equation model as developed by Friend and Puckett (1964). The following was the model in its unspecified form.

1. Price Function

Pt= f [Dt, Rt, P/E (t-1)]

2. Dividend Supply Function

Dt= f [Et, D(t-1), P/E (t-1)]

3. Identity,

Et=Dt+Rt

Where,
P= market price per share.
D= Dividend per share.
R= Retained earning per share.
E= Earning per share (D+R)
P/E= Deviation from the sample,
(Average of price earning ratio)
t= subscript of time.

It was found, from the result of their two stages least square estimation, that the estimated coefficients had the correct sign and the coefficients of determination of all the equations were very high in case of chemical industry. It implies that the stock price and dividend supply variation can be explained by their independent variables. But in case of sugar industry, they found that the sign for retained earnings is negative in both years and left for further analysis of sugar industry. It was observed that the coefficient of dividend was very high as compared to retained earnings for chemical industry. They also found that coefficient of dividend was significant at one percent level in both years whereas coefficient of retained earnings was significant at ten percent level in1969 and one percent level in 1973.

Finally, they concluded that dividend hypothesis holds well in the chemical industry. Both dividend and retained earnings significantly explain the variation in share price in chemical industry. They also stressed that the impact of dividend is more pronounced than that of the retained earnings but the market has started shifting towards more weight for retained earnings.

2.2.8 Michaely, Thaler & Womack's Study

R. Michaely, Richard H. Thaler & Kent L. Womack (1995) conducted a study on price reactions to dividend initiations and omissions. They investigated the immediate and long-term effects of dividend initiation & omission announcements. They found that the short – run price impact of dividend omissions was negative and that of initiations was positive. Initiation reactions were about one-half the magnitude of the market reaction to omission announcements. They change in yield, however, was about seven times larger for the

omission announcements. They saw that the market reaction to a dividend omission announcement was no greater than to an initiation for a given change yield.

2.3 Review of Nepalese Studies

2.3.1 Review of Journals and Articles in Nepalese Perspective

Dr. M. K. Shrestha (1981), in his articles article *"Public Enterprises: Have They Dividend Paying Ability?"* highlighted (focused) the following issues in the article.

Government wants two things from the public enterprises:

They should be in a position to pay minimum dividend & Public enterprises and should be self-supporting in financial matters in future years to come. But these both objectives are not achieved by public enterprises.

1. One reason for this inefficiency is caused by excessive governmental interference over daily affairs even though there is provision of government interference only for policy matters. On the other hand, high-ranking officials of Nepal Government appointed as directors of board do nothing but simply show their bureaucratic personalities, Bureaucracy has been the enemy of efficiency and thus led corporation to face losses. Losing corporations are, therefore, not in a position of pay dividends to government.
2. Another reason of this is the lack of self-criticism and self-consciousness (Shrestha, 1981:13).

Dr. M. K. Shrestha (1992), in his article *"Shareholders' Democracy and Annual General Meeting Feedback"* has dealt with the policies and financial performance of some financial companies and has made the following outcomes:

i. The cost-push inflation at exorbitant rate has made the shareholders to expect higher return from their investment.

ii. Multiple decrease in the purchasing power of the Nepalese currency to the extent that higher return by way of dividend is just a natural economic consequence of it.

iii. Erosion in the purchasing power of the income has made it clear that dividend payment must be directed to enhance shareholders' purchasing power by raising dividend payout ratio on the basis of both earnings and cost theory.

iv. Indo-Nepal trade and transit deadlock has become a sort of economic warfare putting rise in the cost of living index to a considerable extent. This is one of the reasons, which made shareholders to expect higher demand for satisfactory dividend.

v. The waiting of five years with peanut dividend in previous year is equally a strong enforceable reason of the bank's shareholders to expect handsome dividend already assured and committed in various reports of the earlier annual general meeting.

vi. One way to encourage risk-taking ability and preference is to have proper risk- return trade off by bank's management board in a way that higher return must be the investment rule for higher risk-takers that comprise bank's shareholders (Shrestha,1992:34-35).

Pradhan, Dr Radhe (1992), had conducted a study on "market behavior of stock in Nepal" in his study he took the sample of 17 enterprises covering the years between1986 to 1990. The objectives of his study were to assess the stock market behavior in Nepal, to examine the relationship of market equity, market value to book value, price-earning, and dividend with liquidity, profitability, leverage, assets turnover, and interest coverage. After his study he found that higher earning enables the organization higher dividend payments and higher dividend payments increases the Market price per share

Manandhar, Dr. K.D. (2000), a research of had published in Management Dynamics entitled to "Preliminary test of Lagged structure of Dividend" Dr. Manandhar, had tried to test whether Nepalese Corporate firms consider the lagged earning and dividend paid to pay the dividend in current year. To carry out the test he had considered 17 corporate companies as samples and set different hypothesis. After this study Dr. Manandhar found that there is significant relationship between change in dividend policy in terms of DPS and change in lagged earning and there is a positive relationship between change in lagged consecutive earning and DPS.

In addition to this there is relationship between distributed lagged profit and dividend when change in lagged consecutive earning is grater than zero, in 65% case, change in DPS and increase in EPS has resulted to the increase in dividend payment in 66.66% of the cases while decrease in EPS resulted decrease in dividend payment.

Likewise Nepalese corporate firms have followed the practice of maintaining constant dividend payment per share.

2.3.2 Review of Thesis

Nabaraj Adhikari (1996), *"Corporate Dividend Practices in Nepa."* The specific objectives of his study are:

(a) To analyze the properties of portfolios formed on dividends.

(b) To examine the relationship between dividends and stock prices.

(c) To survey the opinions of financial executives on corporate dividend practices.

The methodology used in the study includes financial tools such as ratio analysis and statistical tools such as correlation co-efficient and probable error. Secondary data are used for the analysis.

Conclusion of his study is that there are differences in financial position of high dividend paying and low dividend paying companies. Other things remaining the same, financial position of high dividend paying companies is comparatively better than that of low dividend paying companies. Another interesting conclusion of his study is that market price of shares affected by dividends. Lastly, financial executives of Nepal reject dividend as a residual decision in Nepalese companies (Adhikari, 1996).

Rishi Raj Gautam (1996), *"Dividend Policy in Commercial Banks, A Comparative Study of NGBL, NIBL and NABIL"* Main objectives of this study are:

- To identify what type of dividend policy is being followed and find out whether the policy followed is appropriate or not.
- To examine the impact of dividend on share prices.
- To identify the relationship between DPS and other financial indicators.
- To know if three is any uniformity among DPS, EPS and DPR of the three sample commercial banks.

The methodology used in the study includes financial tools such as ratio analysis and statistical tools such as correlation co-efficient and probable error. Secondary data are used for the analysis.

The major Findings of his study are:

- Average earnings per share and dividend per share of all concerned banks are satisfactory.
- Analysis indicates that there is the largest fluctuations in EPS and DPS and have relatively more consistency dividend per share in all the three banks.
- No commercials banks seen to be guided by clearly defined dividend strategy in spite of the good earnings and potentials.
- Shares of the financial institution are actively traded and market prices are increasing.
- Commercials banks represent a robust body of profit earnings organization in comparison to the other sectors such as manufacturing, trading etc.
- One of the most striking findings of this study is that no commercial bank sample for this study has clearly dividend strategy. On the other hand, there is significant relationship perceives between earnings and dividend of expansion program.

Timilsena, Sadakar (1997), had conducted a study entitled "Dividends and stock price an empirical study", he used multiple regression models of three independent variables. Besides this he also tried to highlight the relationship between stock price and other independent variables separate simple linear regression equations. The sectors chosen for the study ware manufacturing and trading sector and banking & insurance sector. Mr.Timilsena chose 16 enterprises as sample and his study covers the data from 1990 to 1994 for analysis.

The main objectives of this study was to test the relationship between dividend per share and stock price, to determine the impact of dividend policy on stock prices and identify whether it is possible to increase the market value of the stock changing dividend policy or payment ratio.

After his study he found out that there is positive correlation between dividend per share and stock price of the sample companies and dividend affects the stock price. Likewise, dividend

policy or dividend per share might help to increase the market price of the share because there is negative relationship between stock prices and lagged earning price ratio.

Prerana Laxmi Rajbhandari (2001) "*Dividend Policy: A comparative Study between Banks and Insurance Cos.*"

The main objective of her study is to find out the appropriate dividend policies and practices in Nepal.

The specific objectives of her study are:

a) To examine the relationship between dividend and market price of the stock.

b) To identify the appropriate dividend policy followed by the banks and insurance companies.

c) To analyze the relation between dividend policy decision of banks and insurance companies.

The methodology used in the study includes financial tools such as ratio analysis and statistical tools such as correlation co-efficient and probable error. Secondary data are used for the analysis.

Conclusion other study is that no consistency in dividend payment is found in all the sample institutions i.e. NGBL, NIRL, NABIL, NIC. and EIC which seems to be paying average DPS Rs20 every year. This shows that none of the six sample institutions have a clearly defined and appropriate dividend policy. The institutions don't seem to follow the optimal dividend policy of paying regular dividend as per the share holder's expectation and interest. This would create uncertainty among the shareholders. The major findings has also led to conclude the controversy existed in declaring dividend by the companies in the sense that the major factors like the firm have been neglected, ignored and disregarded which must have been considered the most.

Subhash Kunwar(2001) *"Dividend Policy: A comparative Study between Nepal Insurance Co. Ltd. and National and General Insurance Co. Ltd."*

The main objectives of his study are:

a. To examine the influence of financial indicators on share price.

b. To show the relationship between dividend per share and other financial indicators.

c. To check the consistencies amongst DPS, EPS, D/P ratio etc. of the sample insurance company.

d. To identify the dividend policy undertaken by each company and the appropriateness of the policy undertaken.

e. To provide useful suggestions to formulate optimal dividend policy and maximize stock price on the basis of findings.

The methodology used in the study includes financial tools such as ratio analysis and statistical tools such as correlation co-efficient and probable error. Secondary data are used for the analysis. Conclusion of his study there arc many factors that influence the dividend and the market value of share such as earnings, liquidity position, efficiency, and leverage. These factors indicate the financial position of the company. If the company has good performance in terms of these factors it will be able to provide returns in the form of dividends to its Shareholders.

Raju Karki (2006), conducted research on, "A Study on Dividend Policy in Finance Companies." The main objectives of the research are,

- To analyze the dividend policy followed by Finance companies.
- To compare the dividend paid by Annapurna Finance Company Ltd and Butwal Finance Ltd.
- To examine the relationship between DPS with EPS, MPS and BPS.
- To predict DPS in future years. The major findings of Karki are as follows,
- The shareholders of AFCL enjoyed higher DPS than those of BFL. AFCL made more EPS than BFL. However, DPR of BFL is higher than DPR of AFCL, which indicates that BFL has concentrated on attracting new shareholders by distributing more portion of its earning while AFCL focused on retaining earning for internal financing.
- There is high positive relationship between DPS and EPS of AFCL and the relationship is statistically significant. However, the relationship between DPS and EPS of BFL is positive but the relationship is insignificant.
- The correlations coefficient indicates that MPS increases with the increase in DPS of each bank and the relationship is positively significant.
- The regression analysis indicates that the MPS of both banks is highly dependent on the DPS and EPS of corresponding banks. The trend analysis

depicts that the DPS of AFCL in the fiscal year 2005/06 and 2006/07 will be Rs.12.76 and Rs.14.85 respectively, whereas the DPS of BFL will be Rs.9.82 and Rs.10.15 in the fiscal year 2005/06 and 2006/07 respectively.

Ajay Raj Khatiwada (2008), conducted research on, "A comparative study of Dividend policy in Nepal Investment Bank Ltd. and Standard Chartered Bank Ltd." The main objectives of the research are, To identify the dividend policy in SCBNL and NIBL. To examine the relationship between earning and dividend distribution. To evaluate the impact of dividend on share price. To examine the relationship of DPS with other financial indicators. Aryal presented the following major findings in his study.

The shareholders of SCBNL received comparatively very high DPS than the shareholders of NIBL. On average, SCBNL paid Rs.110 DPS, whereas NIBL paid Rs.14.50 DPS. SCBNL remained more successful than NIBL in generating earning per share. On average, SCBNL earned Rs.155.84 per share, while NIBL earned only Rs.50.54. The DPR of SCBNL is also very high compared to that of NIBL. The average DPR of SCBNL is 70.59% and that of NIBL is 28.69%. DPS has high influence on the price rise/fall of share. Both MPS and BPS are highly dependent on the DPS of corresponding banks. The prime objective to invest in bank is to earn dividend. About 78% of the respondents stated that dividend is the most alluring factor in share investment.

There exists high correlation between DPS and EPS, DPS and MPS and DPS and BPS of both banks.

2.3.3 Research Gap

There are hundreds of researches related to banking sectors a lot of study covers the dividend policy of commercial bank. This study has been carried out latest dividend policy of commercial banks. This research will be helpful to understand some aspects of dividend policy of commercial banks of Nepal & provides present scenario of dividend payments.

CHAPTER-III
RESEARCH METHODOLOGY

3.1 Introduction

A brief introduction of this study has been already presented in the first chapter. Besides the review of the ideas, theories and research findings have also been presented in second chapter. Now it is important to have a look into research methodology that helps to make this analysis meaningful. This chapter highlights the method of research adopted in this study. Research design, sample selection, data collection procedure, period covered, data processing procedure and tools used for analysis are included under this chapter. The analytical as well as descriptive research designs have therefore been included in the present study. In this study, research methodology has been paid due attention to achieve the objectives of the study.

3.2 Research Design

The main objective of this research work is to evaluate the dividend policy of Standard Chartered Bank Ltd., Nabil Bank Limited and Nepal Investment Bank Ltd. To complete this study, following design and format has been adopted. First of all, information and data are collected. The important information and data are selected. Then data are arranged in useful manner. After that, data are analyzed by using appropriate financial and descriptive and analytical tools. In analysis part, interpretation and comments are also made wherever necessary.

3.3 Sources of Data

The study is based on secondary data. The secondary data are collected from their respective annual reports especially from profit and loss accounts, balance sheet and other publications made by the banks. Likewise, some other related information is gathered from related banks and related agencies like Nepal Rastra Bank, Nepal Stock Exchange Limited.

3.4 Population and Sample

At present, there are 27 commercial banks operating in Nepal. Due to time and resource factors, it is not possible to study all of them regarding the study topic. Therefore, three banks are taken as samples:

(i) Standard Chartered Bank Ltd.

(ii) Investment Bank Ltd.

(iii) Nabil Bank Ltd.

3.5 Period of the Study

The study is based on five years financial data of sample banks (i.e., Standard Chartered Bank Ltd., Investment Bank Ltd. & Nabil Bank Ltd.) from fiscal year 2005 to 2009.

3.6 Research Tools

To achieve the objectives of the research, the following financial and statistical tools will be used.

3.6.1 Financial Tools

Earning Per Share (EPS)

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

EPS is computed to know the earnings capacity and to make comparison between concerned banks. This ratio can be computed by dividing the earning available to common shareholders by the total number of common stock outstanding of banks. Thus,

$$\text{EPS} = \frac{\text{Earning available to common stock holders}}{\text{Number of common stock outstanding}}$$

Dividend Per Share (DPS)

Dividend per share indicates the rupee earnings actually distributed to common stockholders per share held by them. It measures the dividend distribution to each equity shareholders. The DPS simply shows the portion of earning distribution to the shareholders on per share basis. Generally, the higher DPS creates positive attitude of the shareholders toward the bank, which consequently helps to increase the market value of the shares. And it also works as the indicator of better performance of the bank management. It is defined as the result received by dividing the total dividend distributed to equity shareholders by the total number of equity shares outstanding. Thus,

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

Bonus Share Dividend (BSD)

Bonus share dividend is the rupee bonus share distributed in case of cash dividend.
It is the distribution of share for share as a dividend. It can be calculated as:

Dividend Payout Ratio (DPR)

It is the portion of the earning used for the payment of dividend. The dividend payout ratio is the earnings paid to the equity holders from the earnings of a firm in a particular year. This ratio shows what percentage of the profit is distributed as dividend and what percentage is retained as reserve and surplus for the growth of the banks. In other words, the amount of dividend that a bank pays depends upon the earning capacity of the bank. Higher earning enhances the ability to pay more dividends and vice versa.

There is a reciprocal relationship between dividends and retained earnings, the higher the dividend payout ratio, the lower will be the retained earnings and hence the capacity of internal financing of the firm is checked. It is calculated to indicate the percentage of the profit that is distributed as dividend. This ratio is calculated by dividing dividend per share by the earning per share. Thus,

$$\text{DPR} = \frac{\text{Dividend per share}}{\text{Earning per share}}$$

And, retention ratio = (1-Dividend payout ratio)

= (1-DPR)

Price-Earning Ratio (P/E Ratio)

Price-earning ratio is also called the earnings multiplier. Price-earning ratio is simply the ratio between market price per share and earning per share. In other words, this represents the amount which investors are willing to pay for each rupee of the firm's earnings. The P/E ratio measures investor's expectation and market appraisal of the performance of firm. This is important to compare the market share prices of different stocks given their earning per share. 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 earning per share to market price per share. Thus,

$$\text{P / E Ration} = \frac{\text{Market per share}}{\text{Earning per share}}$$

Earning Yield and Dividend Yield (EY and DY Ratio)

The earning yield and dividend yield both are expressed in terms of the market value (price) per share. Earning yield and dividend yield are two important profitability ratios from the point of view of the ordinary shareholders.

Earning Yield (EY)

Earning per share as the percentage of market price per share in the stock market is called the earning yield. In other words, it is a financial ratio relating to earning per share to the market share price at a particular time. It measures the earning in relation to market value of share. It gives some idea of how much an investor might get for his money.

The share with higher earnings yield is worth buying. Earning yield is informative to compare the market share prices of stocks in the secondary market. It is calculated as:

$$\text{EY Ratio} = \frac{\text{Earning Per sher}}{\text{Market Price per share}}$$

Dividend Yield (DY)

Dividend yield is a percentage of dividends per share on market price per share. It shows that how much is the dividend 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. Dividend has important guidance to commit funds for buying of shares in the secondary market. This ratio is calculated by dividing dividend per share by market price of the stock. Thus,

$$\text{DY Ratio} = \frac{\text{Dividend Per Share}}{\text{Market Pr ice per share}}$$

Market Price per Share (MPS)

MPS refers to the rupees value of on share that is being transaction in the NEPSE. This is affected by DPS and EPS of the firm. The capital market determines MPS.

3.6.2 Statistical Tools

I. Mean or Average (x)

Mean or average is the set of observations that represent the entire data. Generally the average value lies somewhere in between the two extremes. For this reason mean is frequently referred to as a measure of central tendency.

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

Where,

$\sum X$ =sum of the sizes of the items.

N = number of items.

Standard Deviation

The measurement of the scatter ness of the mass of figures in a series about an average is known as dispersion. The standard deviation measures the absolute dispersion of a distribution. The greater the amount of dispersion, greater the standard deviation. A small standard deviation indicates high degree of

uniformity of the observation as well as homogeneity of a series and a large standard deviation indicates low degree of uniformity. It is calculated for selected dependent and independent variables specified in the analysis model. It is usually denoted by the Greek Letter a (sigma)

Standard deviation (σ) = $\sqrt{\frac{\sum(x-\bar{x})}{N}}$

Where,

N = number of items in the series

$\bar{x}$ = mean

x = variable

II. Coefficient of Variation

The coefficient of variation is the relative measure of dispersion, comparable across which is defined as the ratios of the standard deviation to the mean expressed percentage.

III. Co-efficient of Correlation

Co-efficient correlation may be defined as the degree of linear relationship existing between two or more variables. From the theory of correlation, the analysis is can study the comparative changes occurring in two related phenomena and their cause effect relation can be examined. In this study, the data related to dividend over the different years will be tabulated and their relationship between them will be drawn out with the help of Co-efficient of correlation. The equation for the coefficient of correlation is as follows:

$$\rho_{xy} = \frac{Cov(x,y)}{\sigma_x \sigma_y}$$

Where,

$\rho_{xy} = \pm 1$

$Cov(x,y) = \frac{1}{n}\sum_{t=1}^{n}(x-\bar{x})(y-\bar{y})$

$\sigma x = \sqrt{\frac{1}{n}\sum_{t=1}^{n}(x-\bar{x})^2}$

Square root $(1/n \sum t = 1 \text{ to } n(y - \bar{y})^2$

$$\sigma x = \sqrt{\frac{1}{n}\sum_{t=1}^{n}(t - \bar{t})^2}$$

ρ_{xy} = value of coefficient of correlation between X and Y set of variable.

Cov (x, y) = covariance between two set of variables 'x' and 'y'

o_x = standard deviation of set of variable x.

o_y = standard deviation of set of variable y.

Multiple co-efficient of correlation are the study on degree of relationship between a Single dependent variables in combination. If we have a taken three variables x, x_2 and x_3 we have the following multiple correlation coefficient.

$R_1.23$ =multiple correlation coefficient between dependent variables x_2 andex_3 on $x_{1.}$

$R_2.13$ = Multiple correlation coefficient between dependent variable $x_2$and joint effect of the independent x_1 and x_3 on x_2

R_3 12 = Multiple correlation coefficient between variable x_3 and joint effect of the independent variables x_1 and x_2 on x_3

The multiple correlations co-efficient listed above are computed by using the following formula:

$$R_{1.23} = \sqrt{\frac{r_{12}^2 + r_{23}^2 - 2r_{12}r_{13}r_{23}}{1 - r_{23}^2}}$$

$$R_{2.13} = \sqrt{\frac{r_{12}^2 + r_{23}^2 - 2r_{12}r_{23}r_{13}}{1 - r_{13}^2}}$$

$$R_{3.12} = \sqrt{\frac{r_{13}^2 + r_{23}^2 - 2r_{12}2_{23}r_{13}}{1 - r_{12}^2}}$$

IV. Coefficient of Determination (r^2)

The coefficient of determination is a measure of the degree of linear association or correlation between two variable one of which happens to be independent and other being dependent variable. In other word r measures the percentage total variation in dependent variables. The coefficient of determination value can have ranging from zero to one. A value or one can occur only if the unexpected variation is zero which simply means that all the data point in the scatters diagram fall exactly on the regression line.

V. Regression Analysis

Regression analysis is a mathematical measure of the average relationship between two or more variables in terms of original units of data. There are two types of variable in regression analysis. The variable whose value is to be predicted is called dependent variable and whereas the variable which is used for prediction is called independent variable. For the study, simple regression analysis will be used.

a. Market value per share on earning per share

This analysis enables us to known whether EPS is the influencing factor of market value per share or not. At what extent the EPS affects the MV Ps.

$y = a + bx$

Where,

y= market value per share

a= Regression constant

b=Regression coefficient

x=Earning per share

b. Market Value per Share on Dividend per Share

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

$Y=a+bx$

Where,

Y= Market value per share

a= Regression constant

b=Regression coefficient

x=Dividend per share

VI. Multiple Regression Analysis

Multiple regression analysis consists of the measurement of the relationship between The dependent variable and two or more independent variables. The variable 'Dividend' depends up on more than two variables and thus the multiple regressions analysis explains it. The variable 'dividend' depends up on more than two variables and thus, the multiple regression analysis explains it. Here for this study the model has been formulated as model.

$DIV = a + b_1 EPS + b_2 MVPS + b_3 NWPS$

a= some constant

b= Regression coefficient of the variable

EPS= Earning per share

MVPS=Market value per share

NWPS=Net worth per share

The above model has been formulated considering earning per share, market value per share and net worth per share as basic factors. Since dividend is high if company has reasonable earning, market value per hare and net worth per share. Similarly market price of the stock is also influenced by several factors like dividend per share and earning per share. Thus multiple regression models of MVPS dependent up on DPS and EPS formulated as:

$MVPS = a + b_1 DPS + b_2 EPS$

Where,

MVPS = Market value per share

DPS = Dividend per share

EPS = Earning per share

VII. Standard Error of Estimate (SEE)

The standard error of estimate measures the variability around the line of regression. It also measures the accuracy of the estimated figures. The lesser the value of SEE of estimate the better is the model fitted. If standard error of estimate is Zero then there is no variation about the line and the correlation will be perfect.

VIII. Regression Constant (a)

The value of constant, which is the intercept of the model, indicates the average level of dependent variable when independent variable is zero. In other words, it is better to understand that 'a' (constant) indicates the mean or average effect on dependent variable of all the variables omitted from the model.

IX. Regression coefficient (b)

The regression coefficient of each independent variable indicates the marginal relationship between the variable and value of dependent variable, holding constant the effect of all other independent variables in the regression model. In other words the coefficient describes how change in independent variables affects the values of dependent variables estimative.

X. T-statistics

To test the validity of our assumption, if sample size is less than or equal to 30 't' test is used. For applying 't' test in the context of small sample ,first 't' value is calculated and compared with the table value of 't' at a certain level of significant for given degree of freedom . If the calculated value of 't' exceeds the table value we know that the difference is significant at 5% level. But if 't' value is less than the concerning table value of the 't' the different is not treated as significant. Formula

$$T = \frac{x_1 - x_2}{S} \times \sqrt{\frac{n_1 n_2}{n_1 - n_2}}$$

Where,

X_1= Mean of the first sample

X_2 = Mean of the second sample

n_1 = number of observation in the first sample

n_2 = number of observation in the second sample.

s = combined standard deviation.

XI. F- Test

It is also called variance ratio test. To test for the significant of the different between more than two sample variance, F- Test can use. The difference between two or more sample variables at the same time, ANOVA is used. In this study, one way ANOVA is used to examine the equality between sample variables.

Formula,

$$F = \frac{\text{Variance between Sample}}{\text{Variance within sample}}$$

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

XII. Test of Hypothesis

Followings are some of the hypothesis that should be tested for the study,

a) First Hypothesis

Null Hypothesis (H_0): There is no significance difference in DPS of sample commercial banks.

Alternative Hypothesis (H_1): There is significance difference in DPS of sample commercial banks.

b) Second Hypothesis

Null Hypothesis (H_0): There is no significance difference in EPS of sample commercial banks.

Alternative Hypothesis (H_1): There is significance difference in EPS of sample commercial banks.

c) Third Hypothesis

Null Hypothesis (H_0): There is no significance difference in DPR of sample commercial banks.

Alternative Hypothesis (H_1): There is significance difference in DPR of sample commercial banks.

CHAPTER-IV

DATA ANALYSIS & PRESENTATION

4. Data Presentation and Analysis

After the collection of research data various sources related to the topic, they are processed, presented and analyzed to get certain result which helps to fulfill the objectives of the study. In the previous chapters objective of the study and the review of different literature of different researchers relating to the topic of the study have been discussed. Now in this chapter secondary data of three commercial banks are taken for the analysis of dividend policy. Also different statistical and financial tools are used for the purpose of analysis of data.

4.1 Financial Analysis

Under this topic various financial ratios has been tried to find out which are related to the study. The comparisons of commercial banks are done.

Table No. 1

Dividend per Share of Three Commercial Banks from 2005 to 2009

Year	NIBL	SCBL	NABIL
2004/05	12.50	120	70.00
2005/06	20.00	130	85.00
2006/07	5.00	80	100.00
2007/08	7.50	80	60.00
2008/09	20.00	50	35
Average	**13**	**92**	**70**
Standard Deviation (S.D.)	**6.20**	**29.26**	**22.14**
Coefficient of Variance	**0.48**	**0.32**	**0.32**

From the above table we can know the impact of dividends on the share price of the above mentioned banks during the period of five years 2005 to 2009.

The average dividend pays by SCBL (Rs. 92) is the highest. The minimum dividend was paid by NIBL (Rs. 5) in the year 2006/07 and maximum dividend was paid by SCBL (Rs. 130) in 2005/06.

By observing the C.V. of above commercial banks, we can arrange the above banks in the following descending orders of their consistency SCBL>NABIL>NIBL. It means there is least fluctuations in dividend payment of SCBL, NABIL, which dividend paid by NIBL have vest fluctuations. In other words the dividend paid by NIBL is more variable then other banks while SCBL, NABIL are less variable among them.

Table No. 2

Earning per Share of Three Commercial Bank from 2005 to 2009

Year	NIBL	SCBL	NABIL
2004/05	39.50	143.14	105.49
2005/06	59.35	175.84	129.21
2006/07	62.57	167.37	137.08
2007/08	57.87	131.92	108.31
2008/09	38	110.33	106.76
Average	**51.44**	**145.72**	**17.37**
Standard Deviation (S.D.)	**10.50**	**23.77**	**13.15**
Coefficient of Variance	**20.41**	**16.31**	**11.20**

Above table shows that earning per share of three commercial banks from the year 2005 to 2009. It shows that all the banks have earned from their investment and it's the earning which shows the strength of the firm. Among the three banks, the maximum earning was made by SCBL (Rs. 175.84) in the year 2005/06 and the minimum earning was made NIBL (Rs. 38) in the year 2008/09.

On average, the EPS of SCBL (Rs. 145.72) is the highest followed by NABIL (Rs. 117.37) and NIBL (Rs. 51.44). S.D. measures for uniformity and homogeneity, so the small the S.D. (Rs. 10.50) of NIBL shows the high uniformity in the earning while high S.D. (Rs. 23.77) of SCBL shows the lack of uniformity of earnings.

By observing the C.V. of above three commercial banks we can arrange the above banks in the following descending order of their consistency NABIL>SCBL>NIBL. It means there are no more fluctuations in earning of NABIL while earning on NIBL shows vast fluctuations.

Table 3

Price Earning Ratio of Three Commercial Banks from 2005 to 2009

Year	NIBL	SCBL	NABIL
2004/05	20.25	16.38	14.27
2005/06	21.23	21.47	17.34
2006/07	27.63	35.25	36.84
2007/08	42.33	51.77	48.70
2008/09	37.10	70.24	45.89
Average	**29.71**	**39.02**	**32.61**
Standard Deviation (S.D.)	**8.71**	**19.89**	**14.30**
Coefficient of Variance	**29.31**	**50.97**	**43.85**

Since PE ratio is the relationship between the earning and market value per share, PE ratio reflects the price currently paid by the market for each rupee of currently resorted earning per share.

From the above table, it can be seen that the P.E. ratio of commercial banks were found to be normal. The average P.E. ratio of the banks can be set in the decreasing order as SCBL>NABIL>NIBL. It means the P.E. ratio of SCBL is the greatest and NIBL is lowest among the three banks.

The C.V. analysis shows that C.V. of SCBL (50.92), NABIL (45.85) & NIBL (29.31) which means NIBL is most consistent in P.E. ratio among other banks.

Table No. 4

Dividend Payout Ratio of Three Commercial Banks from 2005 to 2009

Year	NIBL	SCBL	NABIL
2004/05	31.65	83.83	66.36
2005/06	33.70	73.93	75.78
2006/07	7.99	47.80	72.95
2007/08	12.96	60.64	55.40
2008/09	53.45	45.32	32.78
Average	**27.95**	**62.20**	**58.65**
Standard Deviation (S.D.)	**16.25**	**14.83**	**14.10**
Coefficient of Variance	**58.14**	**23.84**	**24.04**

From above table it can be observed the DP ratio of different three commercial banks from year 2005 to 2009. We can categorical the above banks as per the following assumptions.

Conservative Dividend Policy : DP ratio < 20% mo
Moderate Dividend Policy : DP ratio from 20% to 50%
Aggressive Dividend Policy : DP ratio < 50%

In the year 2044/05 all the banks paid dividend. NIBL has DP ratio 31.65%, SCBL has DP ratio 83.83%, NABIL has DP ratio 66.36%. In this year NIBL have followed moderate dividend policy. SCBL & NABIL has followed aggressive dividend policy.

In the year 2005/06 NIBL have followed moderate dividend policy and paid 33.70 dividend. SCBL & NABIL have followed aggressive dividend policy and 73.93% & 65.78 respectively.

In the year 2006/07 NIBL has followed conservative dividend policy as it has DP ratio 7.99% and SCBL and NABIL has followed moderate dividend policy and aggressive dividend policy respectively. SCBL & NABIL paid 47.80% & 72.95% respectively.

In the year 2007/08 NIBL has followed conservative dividend policy as it has DP ratio 12.96% and SCBL and NABIL has followed moderate dividend policy and paid 60.64% & 55.40% respectively.

In the year 2007/08 NIBL has followed aggressive dividend policy as it has DP ratio 53.45% and SCBL and NABIL has followed moderate dividend policy and paid 45.32% & 32.78% dividend respectively.

In average NIBL (27.95) has followed moderate dividend policy while SCBL & NABIL has followed aggressive dividend policy. The most DP ratio was in the year 2004/05 of SCBL (83.33%) & the least DP was of NIBL (7.99%) in the year 2006/07.

By observing the C.V. we can conclude that SCBL (23.84) & NABIL (24.14%) have large fluctuation on the DP and said to be not consistent.

Table No. 5

Dividend Yield of Three Commercial Banks from 2005 to 2009

Year	NIBL	SCBL	NABIL
2004/05	1.56	5.12	4.65
2005/06	1.59	3.44	3.79
2006/07	0.29	1.36	1.98
2007/08	0.31	1.17	1.13
2008/09	1.44	0.75	0.71
Average	**1.04**	**2.35**	**2.45**
Standard Deviation (S.D.)	**0.60**	**1.68**	**1.53**
Coefficient of Variance	**57.69**	**71.49**	**62.45**

Dividend yield highly influences the market value per share as change in dividend per share can be effective change in the market value of share. The above table shows the dividend yield analysis of three commercial banks from 2005 to 2009.

In the year 2004/05 SCBL acquired the most (5.12%) dividend Yield white NIBL (1.56%) acquired the least and NABIL acquired 4.65%, dividend Yield. In the year 2005/06 SCBL

NABIL acquired less dividend Yield from previous year, and NIBL acquired more dividend Yield from the previous year.

In the year 2006/07 and 2007/08 NIBL, SCBL, NABIL acquired less dividend Yield from the previous year.

In the year 2008/09 SCBL NABIL acquired less and NIBL acquired more dividend Yield from the previous year.

From the analysis of five years average dividend Yield, NABIL (2.45) have the highest dividend Yield. The coefficient of variance analysis shows that the dividend Yield of NIBL (57.69%) is the most consistent followed by NABIL (62.45%). By the C.V. of SCBL (71.49%) seems to be more fluctuating.

Table No. 6

Market Value per Share of Three Commercial Banks from 2005 to 2009

Year	NIBL	SCBL	NABIL
2004/05	800	2345	1505
2005/06	1260	3775	2240
2006/07	1729	5900	5050
2007/08	2450	6830	5275
2008/09	1388	7750	4899
Average	**1525.4**	**5320**	**3793.8**
Standard Deviation (S.D.)	**549.88**	**1987.92**	**1590.37**
Coefficient of Variance (C.V.)	**36.05**	**37.37**	**41.92**

Market value per share evaluates value of shares in the market. In the year 2008/09 SCBL MPS was highest of all i.e. 7750 and least MPS was 800 of NIBL in the year 2004/05. The average MPS of NIBL was least (1524.4) and highest of SCBL (5320). The highest MPS was of SCBL in every year 2005 to 2009.

The above bank can be arranged in the descending order of consistncy as NIBL (36.05%) SCBL (37.37%) of NABIL (41.92%). the above C.V. shows that NIBL is more consistent and NABIL more fluctuating.

4.2 Correlation Analysis

Table No. 7 Correlation between DPS and MPS of three commercial banks.

BANK	Coefficient of Correlation (r)	Relationship	R^2	Probable Error
NIBL	-0.522	Negative	0.2725	0.2194
SCBL	-0.93	Negative	0.8649	0.0404
NABIL	-0.22	Negative	0.0484	0.2870

Above table shows the relationship between DPS and MPS of three co9mercial banks respectively from the period of five years starting from 2005 to 2009. All banks are negatively correlated.

From the above relations it can be said that increase and decreases in dividend per share dose not lead to increase and decease in the stock price.

Table No. 8 Correlation between EPS and MPS of Three Commercial Banks

BANK	Coefficient of Correlation (r)	Relationship	R^2	Probable Error
NIBL	0.576	positive	0.3318	0.2015
SCBL	-0.564	Negative	0.318	0.2057
NABIL	0.08	Positive	0.0064	0.2997

The above table shows the relationship between EPS and MPS of NIBL, SCBL NABIL respectively. Positive correlations have existed in NIBL (0.576) and NABIL (0.08). SCBL are negatively correlated. All the three banks shows the low degree of relationship (insignificants) where r < 6P.E. in all. Therefore it can be conclude that stock price is highly affected by their earning per share.

Table No. 9 Correlation between PE Ratio and MPS of Three Commercial Banks

Bank	Coefficient of Correlation (r)	Relationship	R^2	Probable Error
NIBL	0.878	positive	0.653	0.1047
SCBL	80.949	Positive	0.9	0.030
NABIL	0.963	Positive	0.9274	0.0218

From the above table it can be seen the relationship between PE ratio and MPS of the three different banks. Positive correlation occurs between all the banks. The correlation coefficient of NIBL, SCBL and NABIL is greater than 6PE, it is significant as its r > 6PE. It shows that PE ratio has positive effect in the stock price.

Table No. 10

Correlation between DP Ratio and MPS

Bank	Coefficient of Correlation (r)	Relationship	R^2	Probable Error
NIBL	0.57	positive	0.329	0.2024
SCBL	-0.91	Negative	0.83	0.081
NABIL	-0.39	Negative	0.152	0.2558

Above table shows the relationship between DP ratio and MPS of three banks in the time period from 2005 to 2009. SCBL and NABIL show the negative relationship and have the correlation coefficient of -0.91 and -0.39 respectively and NIBC is positively correlated as correlation coefficient is 0.574. Although NIBC'S coefficient of correlation (r) is greater then P.E., it is not significant as its r<6PE.

Negative relation exists SCBC and NABIL from above relationship between or and MPS of banks in more case it shows negative relation so it can be said that DP affect on stock price negatively.

Table No. 11

Correlation between DY and MPS of Three Commercial Banks

Banks	Coefficient of Correlation (R)	Relationship	R^2	Probable Error
NIBL	-0.852	Negative	0.726	0.083
SCBL	-0.98	Negative	0.9604	0.0119
NABIL	-0.95	Negative	0.9025	0.0294

The above table shows the relationship between DY and MPS. It shows high degree of negative relationship between dividend Yield and MPS in all the three banks NIBL (-0.852), SCBL (-0.98) and NABIL (0.9025). It means DY affects on stock price negatively of the above three banks.

4.3 Regression Analysis

Table No. 12

Regression between MPS and EPS of Three Commercial Banks

Banks	Constant (A)	Relationship Coefficient (B)	Standard Error	R^2	SEE
NIBL	13.44	29.4532	24.49	0.325	582.98
SCBL	12.19	-47.12	3.75	0.317	10603.73
NABIL	2651.79	9.73	2.37	0.0064	2046.51

The above table shows the simple regression analysis between market price per share and earning per share of the three commercial banks.

From the table, it can be seen that the regression coefficient (B) of NIBL (29.45), NABIL (9.73), is positive, which shows the positive correlation between MPS and EPS of concerned banks, which implies one rupee increases in EPS leads to an average of about Rs. 29.45 increase in MPS of NIBL, Rs. 973 in NABIL holding other variable constant which can effect on MPS.

The regression coefficient (B) is negative in SCBL (-47.12), which indicates the negative correlation an implies one rupee increase in EPS leads to an average decrease on Rs. 47.12 in SCBL, and SCBL shows that the bank's MPS dos not depends on EPS.

The coefficient of determination (R^2) of NIBL (0.325), SCBL (0.317) and NABIL (0.0064) indication 32.5%, 31.7% and 0.64% of stock variation is explained by variation in EPS of NIBL, SCBL and NABIL respectively.

Table No.13

Regression between MPS and DPS of Three Commercial Banks

Banks	Constant (A)	Relationship Coefficient (B)	Standard Error	R^2	SEE
NIBL	2144.72	-47.64	43.14	0.2894	598.60
SCBL	11105.88	-62.89	14.85	0.8556	971.63
NABIL	1.1911	-15.96	119.57	0.0484	5918.49

The above table shows the simple regression analysis between market price per share and dividend per share of the three commercial banks.

From the above table we can see the regression coefficient (B) of is negative in NIBL (-47.64), SCBL (-62.89) and NABIL (-15.96) which indicates the negative correlation an implies one rupee increase in DPS leads to an average decrease on Rs. 47.64, in NIBL, Rs. 62.84 in SCBL and Rs. 15.96 in NABIL, and NIBL, SCBC, NABIL shows that these banks MPS does not depends on DPS.

Similarly, the coefficient of determination (R^2) of NIBL (0.2894), SCBL (0.8586) and NABIL (0.0484), indicates 28.94%, 85.86% and 4.84 stock variation is explained by variation in DPS of NIBL, SCBL and NABIL respectively.

4.6 Test of Hypothesis

4.6.1 First Hypothesis

Null Hypothesis (H_0) = $\mu_{1=}\ \mu_{2=}\ \mu_3$ i.e. There is no significant difference in DPS of sample banks.

Alternative Hypothesis (H_1)= $\mu_1 \neq \mu_2 \neq \mu_3$ i.e. There is no significant difference in DPS of sample banks.

Dividend Per Share

Bank / Year	NIBL	SCBL	NABIL
2004/05	12.5	120	70
2005/06	20	130	85
2006/07	5	80	100
2007/08	7.50	80	60
2008/09	20	50	35

F-Test Statistic

Correction factor (C.F) = 51041.67

Total sum of squares (TSS) = 23545.83

Sum of square due to row or between banks (SSR) = 16623.33

Sum of square due to error or with in banks (SSE) = 6922.5

Table No.14

One-way ANOVA table for DPS

Sources of Variation	Sum of Squares	Degree of Freedom CD.F.= n-1	Mean Sum of Squares	F-Ratio
Between Banks	16623.33	2 (3-1)	8311.67	14.40
Within Banks	6922.5	12 (15-3)	576.88	
Total	**23545.83**	**14 (15-1)**		

Critical value: The tabulated value of F at 5% level of significance for 2 and 12 D.F. is 3.89.

Decision: Since the calculated value of F is greater than the tabulated value of F the null hypothesis (H_0) is rejected and hence the alternative hypothesis (H_1) is accepted. There fore we can conclude that there is significance difference in DPS of sample banks.

4.6.2 Second Hypothesis

Null Hypothesis (H_0) = $\mu_{1=}\ \mu_{2=}\ \mu_3$ i.e. There is no significant difference in EPS of sample banks.

Alternative Hypothesis (H_1) = $\mu_1 \neq \mu_2 \neq \mu_3$ i.e. There is no significant difference in EPS of sample banks.

Year/Bank	NIBL	SCBL	NABIL
2004/05	39.50	143.14	70
2005/06	59.35	175.84	85
2006/07	62.57	167.87	100
2007/08	57.87	131.92	60
2008/09	37.42	110.33	35

F-Test Statistic

Correction Factors (C.F.) = 118959.22

Total sum of squares (TSS) = 30902.31

Sum of square due to row or between banks (SSR) = 25038.86

Sum of square due to error or with in banks (SSE) = 5863.95

Table No.15

One-Way ANOVA table of EPS

Sources of Variation	Sum of Squares	Degree of Freedom CD.F.= n-1	Mean Sum of Squares (MS)	F-Ratio
Between Banks	25038.86	2 (3-1)	12519.43	25.61
Within Banks	5863.95	12 (15-3)	488.66	
Total	**3092.31**	**14 (15-1)**		

Critical Value: The tabulated value of F at 5% level of Significance for 2 and 12 D.F. is 3.89.

Decision: Since the calculated 'F' is greater than tabulated value of 'F' the null hypothesis (H_0) is rejected and hence the alternative hypothesis (H_1) is accepted. There fore, we can conclude that there is significant difference in EPS of samples banks.

4.6.3 Third Hypothesis

Null Hypothesis (H_0) = $\mu_{1=}\ \mu_{2=}\ \mu_3$ i.e. There is no significant difference in DPR of sample banks.

Alternative Hypothesis (H_1) = $\mu_1 \neq \mu_2 \neq \mu_3$ i.e. There is no significant difference in DPR of sample banks.

Dividend Payout Ratio (DPR)

Year/Bank	NIBL	SCBL	NABIL
2004/05	31.65	83.83	66.36
2005/06	33.70	73.93	65.78
2006/07	7.99	47.93	72.95
2007/08	12.96	60.64	55.40
2008/09	53.45	45.32	32.78

F-Test Statistic

Correction Factors (C.F.) = 36956

Total sum of squares (TSS) = 6975.21

Sum of square due to row or between banks (SSR) = 3560.42

Sum of square due to error or with in banks (SSE) = 3414.79

Table No.16

One-Way ANOVA table of DPR

Sources of Variation	Sum of Squares	Degree of Freedom C.D.F.= n-1	Mean Sum of Squares (MS)	F-Ratio
Between Banks	3560.42	2 (3-1)	1780.21	6.26
Within Banks	3414.79	12 (15-3)	284.56	
Total	**6975.21**	**14 (15-1)**		

Critical Value: The tabulated value of F at 5% level of Significance for 2 and 12 D.F. is 3.89.

Decision:- Since the calculated 'F' is greater than tabulated value of 'F' the null hypothesis (H_0) is rejected and hence the alternative hypothesis (H_1) is accepted. There fore, we can conclude that there is significant difference in DPR of samples banks.

4.7 Major Findings

The major findings of the study are stated as follows:

1. The SCBL has the highest DPS Rs. 130 to the share holders. The C.V. of the DPS is 31% NABIL of SCBL and NIBL pay the lowest DPS Rs. 5 and highest fluctuation C.V. 48%
2. By observing the date of three commercial banks (NIBL, SCBL and NABIL) earning per share, the coefficient of variation indicates that there is no consistency of EPS. The C.V. is 11.20% of NABIL and that of SCBL is 16.31% and NIBL is 20.41%, SCBL has highest average EPS Rs. 145.72 NIBL has least average EPS Rs. 52.44.
3. The average PRICE-earning ratio (PLE) of SCBL is 39.02%, and NIBL'S PE ratio is 29.71%. SCBL has highest PE ratio. RE ratio of SCBL is more unstable than others. Higher the PE ratio indicates the favorable condition of the banks so SCBL HS favorable performance during the research period.
4. The analysis of DPR shows that in an average SCBL has the highest DPR 62.20 and last fluctuation. NIBL'S DPR is more fluctuating
5. The average dividend Yield of the banks under the study indicates that the dividend Yield is quite low. NABIL has average dividend Yield 2.45%, SCBL 2.35% and NIBL 1.04%
6. The average market value per share (MVPS) shows that there is quite high level of fluctuation. SCBL has higher average MVPS Rs. 5320, but average MVPS of NIBL Rs. 1525.4 which is lowest in comparison to SCBL.
7. The PE ratio mps of SCBL is positively come and but the correlation between DPS and mps, EPS and PMS, DP ratio and mps, DY and MPS is negative.
8. The correlation of NABIL between DPS and MPS, DPR and MPS, DY and mps in negative. But the correlation between EPS and MPS, PE ratio and MPS is positive.
9. The DPS and MPS, DY and MPS of NIBL is negatively correlated. But the correlation between EPS and mps PE ration and MPS, DPR and MPS is positive.
10. The regression between MPS and EPS indicates that the regression coefficient (B) is positive of NIBL and NABIL but SCBL is negative.
11. The regression of MPS and DPS shows that regression coefficient (B) is negative in all the three banks NIBL, SCBL and NABIL.

12. The first hypothesis between DPS of NIBL, SCBL and NABIL is greater than the tabulated value at 5% level of significance. So null hypothesis (H_0) is rejected and alternative hypothesis (H_1) is accepted, which is significance.
13. The second hypothesis between EPS of three commercial banks is greater than the tabulated value at 5% level of significance. So null hypothesis (H_0) is rejected and alternative hypothesis (H_1) is accepted which is significance.
14. The third hypothesis between DPR of three commercial banks is greater than the tabulated value at a 5% level of significance. So null hypothesis (H_0) is rejected and alternative hypothesis (H_1) is accepted, which is significance.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

In this chapter, three major aspects of the study are discussed; at the beginning all the findings have been summarized and some conclusions have been drawn up based on findings. The gaps found and factors to cause those gaps are also presented, this chapter is very important in the sense that;

a) It shows a glance of the study what was observed during research.
b) It concludes the findings in an understandable form and
c) It provides some suggestion to the concerned authority as well as practitioner and academicians.

The recommendation is presented in this chapter considering major findings and gaps found there too.

5.1 Summary

Dividend refers to that portion of firm's net earning which is paid out to the shareholders. Dividend servers as simple, comprehensive signal of management's interpretation of the firm's record performance and its future prospects. The improved corporate dividend practices are thus essential means to solve the problem of asymmetric information between companies and Nepalese's investors who have poured their fund there in.

This study attempts to analyze the dividend policy of commercial banks. The study is based on secondary data for a period of 2004/05 to 2008/09. To analyze the dividend payment practices of banks, different financial ratios have been calculated and interpreted.

To assess the impact of dividend on MPS, available information from different sectors were reviewed and analyzed. Simple regression analyses have been done to make the research more reliable. At least, testing of hypothesis has been done.

It is found from the study that banks are paying dividend but there is instability of dividend and inconsistent payout ratio is the most applied phenomenon of Nepalese dividend distribution practices. The study shows that none of the banks have well defined and appropriate dividend policy. They don't seem to follow the optimum dividend policy of paying regular dividend as per the shareholders expectation. It might cause uncertainty among shareholder. A change in dividend per share and payout ratio affects the share price differently in different banks.

In Nepal, only a few listed companies have paying regular dividend to their shareholder. Further companies have not been following stable dividend policy, on the other hand, the dividend payout ratio of listed companies in Nepal has not been able to distribute fair dividends. The theoretical statement of this study is to study the dividend practices of sampled bank therefore, it is concluded that more or less the dividend policy depends on the earning per share of a company: the earning per share and dividend per share having the positive relation may also impact on market price of share. For this argument, there were two multiple regression formed.

The theoretical statement of this paper is to study the dividend practices of sampled banks therefore, it is concluded that more or less the dividend policy depends on the earning per share of a company. The earing per share and dividend per share may also impact on market price of share. For this argument two simple regressions were formed. The first simple regression was formed to assess the impact of EPS on market price of share. It concludes the fact that earning per share has positive and negative impact on MPS whereas the second simple regression was formed to assess the impact of DPS on MPS. From the analysis, it is found that the DPS has positive and negative impact on MPS. From the regression analysis, it can be concluded that a change in dividend per share affects the share price differently in differently in different banks.

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

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

5.2 Conclusion

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

1. There is lack of rules and regulations that bind companies to pay dividend every year. Not only the companies do not have dividend policy but also the government does not have any clear policy towards dividend.
2. There seems instability of dividend and inconsistency in dividend payout ratio of the banks.
3. Every year EPS and MPS are highly fluctuating. The CV of EPS has ranged from 11.20 to 20.41 percent. Similarly market prices per share are also fluctuating. This short of fluctuation causes not to win public faith.
4. The average dividend yield of banks has ranged from 1.04 percent to 2.45 percent. The highest percent of 2.45% is also cannot be considered so encouraging figure.
5. Shareholders in Nepal are not conscious. Taking the advantage of unconscious shareholders, the company management does not show the commitment promised in prospectors while raising capital. Promoter lures investors mentioning to pay attractive dividends, when company makes profit. However in reality, most of the companied are deviated from their statement as promise in prospectus.

6. Government does not have any clear policy towards dividend and to improve the efficiency of the companies. The number of companies can not earn enough profit and bureaucrats accused the cause of inefficiency to managers which is not sound.

5.3 Suggestion and Recommendation

Considering the major findings and issues found in course of this study, some recommendations are presented as follows;

1. Banks are paying dividend without adopting any appropriate policy. Companies should have their clearly defined dividend policy. Clearly defined dividend policy helps to determined specific policy i.e. stables dividend or constant pays out or low regular plus extras. What should be the long run dividend payout policies or smoothed dividend policy. This helps to investor in deciding whether to buy or not the share of particular company and to build good image, stock market.
2. There is a lack of rules binding companies to pay dividend. The legal rule for the treatment of dividend is most for smooth growth of the enterprises as well as national economy. Some regulating acts are silent on these matters. Some companies are in position to pay dividend. But some companies are suffering from lose and there are efforts to minimize loss rather than payment of dividend. For this purpose, GON, NEPSE, SCBON and concerned parties should do work together in favor of investors and bind their companies by separate rules.
3. Shareholders should be given an option to choose between stock dividend and cash divided instead of declaring stock or cash dividend arbitrarily. For this, dividend declaration should be proposed to the annual general meeting of shareholders for approval.
4. Payment of dividend is neither static nor constantly growing. It is highly fluctuating; such way of paying dividend could not impress the market positively. So, these banks are advised to follow either static or constantly growing dividend policy. It would be better to fix the amount of dividend in the general annual meeting. This is important not only from the point of view of adequate return to shareholders but also to generate stable and increasing

market value per share, long run survival of banks, efficient management and socially acceptable distribution of income.

5. Banks are advice to have target rate of earning and target payout ratio that will help companies to build good image in stock market and investors will be ease on making investment decision.
6. The legal rules and regulations must be in favor of investors to excise the dividend practice and to protect the shareholders rights.
7. Each and every company should provide the information regarding their activities and performance so that investors can analyze the situation and invest their money in the best company.
8. Although the payout ratio of the sample banks is fluctuating from year to year, there is no rational approach in deciding the payout. All the banks should analyze the internal rate of return and the cost of capital in deciding DPR which helps to maximize the shareholders' wealth.
9. The government should encourage for the establishment of organization to promote and protect activities in favor of investors. There are not any other organizations fully devoted to protect investors' interest.

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APPENDIX-1

Related to Table 4.1

Mean/Average, Standard Deviation and Coefficient of Variation of Dividend per Share (DPS)

(A) Nepal Investment Bank Ltd. (NIBL)

Year	**X**	**$(X-\bar{X})$**	**$(X-\bar{X})^2$**
2004/05	12.50	– 0.5	0.25
2005/06	20.00	7	49
2006/07	5.00	– 8	64
2007/08	7.50	– 5.5	30.25
2008/09	20.00	7	49
N = 5	**$\sum X=65$**		**$\sum = (X-\bar{X})^2 = 192.5$**

Note:

Vale of X represents dividend per share; DPS

$$\text{Mean } (\bar{x}) = \frac{\sum X}{n} = \frac{65}{5} = 13$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\sum (X-\bar{X})^2}{N}} = 6.20$$

$$\text{CoefficiendofVaration(C.V.)} = \frac{\sigma}{\bar{X}} = 0.48$$

(B) Standard Chartered Bank Ltd. (SCBL)

Year	**X**	**$(X-\bar{X})$**	**$(X-\bar{X})^2$**
2004/05	120	28	784
2005/06	130	38	1444
2006/07	80	– 12	144
2007/08	80	– 12	144
2008/09	50	– 42	1767

N = 5	**∑X=460**		**$\sum = (X - \bar{X})^2$ =4280**

Note:

Vale of X represents dividend per share; DPS

$$\text{Mean } (\bar{x}) = \frac{\sum X}{n} = 92$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}} = 29.26$$

$$\text{CoefficiendofVaration(C.V.)} = \frac{\sigma}{\bar{X}} = 0.32$$

(C) Nabil Bank Ltd.

Year	**X**	**$(X - \bar{X})$**	**$(X - \bar{X})^2$**
2004/05	70	0	0
2005/06	85	15	225
2006/07	100	30	900
2007/08	60	– 10	100
2008/09	35	– 35	1225
N = 5	**∑X=350**		**$\sum = (X - \bar{X})^2$ =2450**

Note:

Vale of X represents dividend per share; DPS

$$\text{Mean } (\bar{x}) = \frac{\sum X}{n} = 70$$

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}} = 22.14$$

$$\text{CoefficiendofVaration(C.V.)} = \frac{\sigma}{\bar{X}} = 0.32$$

Note: By using the above formula. Average S.D. and C.V. of EPS, PE ratio, DY and MPS of three sample banks related to 4.2, 4.3, 4.4, 4.5 and 4.6 calculated.

APENDIX-2

Related to Table 4.7

Correlation between Divided per Share (DPS) and Market Price per Share (MPS)

(A) Nepal Investment Banks Ltd. (NIBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	12.50	800	–0.5	0.25	–725.4	526205.16	362.7
2005/06	20.00	1260	7	49	–265.4	70437.15	–1587.8
2006/07	5.00	1729	–8	46	203.6	41452.96	–1628.8
2007/08	7.50	2450	–5.5	30.25	724.6	854885.16	–5085.3
2008/09	20.00	1388	7	49	–134.7	18878.76	–961.8
n = 5	**∑X=65**	**∑Y= 7627**	$\sum(X-\bar{X})$ **= 0**	$\sum(X-\bar{X})^2$ **= 192.5**	$\sum(Y-\bar{Y})$ **= 0**	$\sum(Y-\bar{Y})^2$ **= 1511859.2**	$\sum(X-\bar{X})(Y-\bar{Y})$ **= – 8901**

Note:

Value of x represent Dividend per Share; DPS value of y represent Market Price per Share; MPS

Mean

$$\bar{x} = \frac{\sum X}{N} = 13$$

$$\bar{y} = \frac{\sum Y}{N} = 1525.4$$

$$\text{Covariance}(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = \frac{-8901}{5} = -1780.20$$

$$\text{Standard Deviation of } x\ (\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 6.20$$

$$\text{Standard Deviation of } x\ (y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 549.88$$

$$\text{Coefficient of correlation } (\gamma) = \frac{\text{Covarinace}(x, y)}{\sigma_x \sigma_y} = -0.522$$

$$\text{Coefficient of Determination } (r^2) = 0.2725$$

$$\text{Probable Error of Correlation Coefficient P.E. (?)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2194$$

(B) Standard Chartered Bank Ltd. (SCBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	120	2345	28	784	–2975	8850625	–83300
2005/06	130	3775	38	1444	–2545	2387025	–58710
2006/07	80	5900	–12	144	580	336400	–6960
2007/08	80	6830	–12	144	1510	2280100	–18120
2008/09	50	7750	–42	1764	2430	5904900	–102060
n = 5	**$\sum X$= 460**	**$\sum Y$= 26600**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = **4280**	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = **1979050**	$\sum(X-\bar{X})(Y-\bar{Y})$ = **–102060**

Note:

Value of x represent Dividend per Share; DPS value of y represent Market Price per Share; MPS

Mean

$$\bar{x} = \frac{\sum X}{N} = 92$$

$$\bar{y} = \frac{\sum Y}{N} = 532$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = -53830$$

$$\text{Standard Deviation of x}\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 29.26$$

$$\text{Standard Deviation of x}\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 1987.92$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = -0.93$$

$$\text{Coefficient of Determination}\,(r^2) = 0.8649$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(?) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0407$$

(C) Nabil Bank Ltd.

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	70	1505	0	0	–2288.8	5238605.44	0
2005/06	85	2240	15	225	–1553.8	2414294.44	–23307
2006/07	100	5050	30	900	1256.5	1578038	37686
2007/08	60	5275	–10	100	1481.2	2193953.44	–14812
2008/09	35	4899	–35	1225	1105.2	1221467.04	–38682
n = 5	**$\sum X$= 350**	**$\sum Y$= 18969**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = **2450**	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = **12646358.8**	$\sum(X-\bar{X})(Y-\bar{Y})$ = **– 38682**

Note:

Value of x represent Dividend per Share; DPS value of y represent Market Price per Share; MPS

Mean

$$\bar{x} = \frac{\sum X}{N} = 70$$

$$\bar{y} = \frac{\sum Y}{N} = 3793.8$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = -7823$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 22.13$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 159.37$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = -0.22$$

$$\text{Coefficient of Determination}\,(r^2) = 0.0484$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(?) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2870$$

APENDIX-3

Related to Table 4.8

Correlation between Earning per Share (DPS) and Market Price per Share (MPS)

(A) Nepal Investment Banks Ltd. (NIBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	39.50	800	–11.96	143.04	–725.4	526205.16	8675.78
2005/06	59.35	1260	7.89	62.25	–265.4	70437.16	–2094.01
2006/07	62.57	1729	11.11	123.43	203.6	41452.96	2261.99
2007/08	57.87	2450	6.41	41.08	924.6	854885.16	5926.69
2008/09	38	1388	–13.46	181.17	–137.4	18878.76	1849.40
n = 5	**ΣX= 257.29**	**ΣY= 7627**	$\Sigma(X-\bar{X})$ **= 0**	$\Sigma(X-\bar{X})^2$ **= 550.97**	$\Sigma(Y-\bar{Y})$ **= 0**	$\Sigma(Y-\bar{Y})^2$ **= 1511859.2**	$\Sigma(X-\bar{X})(Y-\bar{Y})$ **= 16619.85**

Note:

Value of x represent Dividend per Share; DPS value of y represent Market Price per Share; MPS

Mean

$$\bar{x} = \frac{\Sigma X}{N} = 13$$

$$\bar{y} = \frac{\Sigma Y}{N} = 1525.4$$

$$\text{Covariance}\,(x, y) = \frac{\Sigma(x-\bar{x})(y-\bar{y})}{N} = \frac{-8901}{5} = -1780.20$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = 6.20$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\Sigma(y-\bar{y})^2}{N}} = 549.88$$

$$\text{Coefficient of correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = -0.522$$

$$\text{Coefficient of Determination}\,(r^2) = 0.2725$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(?) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2194$$

(B) Standard Chartered Bank Ltd. (SCBL)

Year	X	Y	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	143.14	2345	-2.58	6.66	-2975	8850625	7675.50
2005/06	175.84	3775	30.12	907.21	-1545	2387025	-46535.4
2006/07	167.37	5900	21.65	468.72	580	336400	12557
2007/08	131.92	6830	-13.8	190.40	1510	2280100	-20838
2008/09	110.33	7750	-35.39	1252.45	2430	5904900	-85997.7
n = 5	**$\sum X$= 728.6**	**$\sum Y$= 26600**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = 2825.44	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = 1975905	$\sum(X-\bar{X})(Y-\bar{Y})$ = 133138.6

Note:

Value of x represent Dividend per Share; DPS

Value of y represent Market Price per Share; MPS

Mean

$$\bar{x} = \frac{\sum X}{N} = \frac{728.6}{5} = 145.72$$

$$\bar{y} = \frac{\sum Y}{N} = 5320$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = \frac{-8901}{5} = -26627.72$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 23.77$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 1987.92$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = -0.564$$

$$\text{Coefficient of Determination}\,(r^2) = 0.318$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(?) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2057$$

(C) NABIL Bank Ltd.

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	105.49	1505	-11.88	141.13	-2288.8	5238605.44	27190.94
2005/06	129.21	2240	11.84	140.19	-1553.8	2414294.44	-18396.99
2006/07	137.08	5050	19.71	388.48	1256.2	1578038.44	24759.70
2007/08	108.31	5275	-9.06	82.08	1481.2	2193953.44	-13419.67
2008/09	107.76	4899	-10.61	112.57	1105.2	1221467.04	-11726.17
n = 5	**$\sum X$= 586.85**	**$\sum Y$= 18969**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = 864.45	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = 12646358.8	$\sum(X-\bar{X})(Y-\bar{Y})$ = 8407.81

Note:

Value of x represent Dividend per Share; DPS

Value of y represent Market Price per Share; MPS

Mean

$$\bar{x} = \frac{\sum X}{N} = 117.37$$

$$\bar{y} = \frac{\sum Y}{N} = 3793.8$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = 1681.56$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 13.15$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 1590.37$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = -0.08$$

$$\text{Coefficient of Determination}\,(r^2) = 0.0064$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(?) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2997$$

APENDIX-4

Related to Table 4.9

Correlation between Earning per Share (DPS) and Market Price per Share (MPS)

(A) Nepal Investment Banks Ltd. (NIBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	20.25	800	-9.46	89.49	-725.4	5262.16	6862.28
2005/06	21.23	1260	-8.48	71.91	-265.4	70437.16	2250.59
2006/07	27.63	1729	-2.08	4.23	203.6	41452.96	-423.49
2007/08	42.33	2450	12.62	159.26	924.6	854885.16	11668.45
2008/09	37.10	1388	7.39	54.61	-137.4	18878.76	-1015.39
n = 5	**$\sum X$= 148.54**	**$\sum Y$= 7627**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = 379.6	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = **1511859.2**	$\sum(X-\bar{X})(Y-\bar{Y})$ = **19**342.44

Note:

Value of x represent P.E. Ratio

Value of y represent Market Price per Share; MPS

Mean

$$\bar{x} = \frac{\sum X}{N} = 29.72$$

$$\bar{y} = \frac{\sum Y}{N} = 1525.4$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = \frac{-8901}{5} = -3868.49$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 6.20$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 549.88$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x,y)}{\sigma_x \sigma_y} = 0.808$$

$$\text{Coefficient of Determination}\,(r^2) = 0.653$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.1097$$

(B) Standard Chartered Bank Ltd. (SCBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	16.38	2345	-22.64	512.57	-2975	8850625	67354
2005/06	21.47	3775	-17.73	314.35	-1545	2387025	27392.85
2006/07	35.25	5900	-3.77	14.21	580	336400	-2186.60
2007/08	51.77	6830	12.75	162.50	1570	2280100	19252.5
2008/09	70.24	7750	31.22	974.69	2430	5904900	75864.6
n = 5	**$\sum X$= 195.11**	**$\sum Y$= 26600**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = 197838	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = 19759050	$\sum(X-\bar{X})(Y-\bar{Y})$ = 187677.35

Note:

Value of x represent P.E. Ratio

value of y represent Market Price per Share; MPS

Mean,

$$\bar{x} = \frac{\sum X}{N} = 39.02$$

$$\bar{y} = \frac{\sum Y}{N} = 5320$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = \frac{-8901}{5} = 37535.47$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 19.89$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 1987.92$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = 0.949$$

$$\text{Coefficient of Determination}\,(r^2) = 0.9$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0302$$

(C) Standard Chartered Bank Ltd. (SCBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	14.27	1505	–18.34	336.35	–2288.8	5238605.44	41976.59
2005/06	17.34	2240	–15.27	233.17	–1553.8	2414294.44	24726.53
2006/07	36.84	5050	4.23	17.89	1256.2	1578038.44	5313.73
2007/08	48.70	5275	16.09	258.89	1481.2	2193953.44	23827.61
2008/09	45.89	4899	13.28	176.36	1105.2	1221467.04	14677.47
n = 5	**$\sum X$= 163.04**	**$\sum Y$= 18969**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = **1022.66**	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = **12646358.8**	$\sum(X-\bar{X})(Y-\bar{Y})$ = **109523.47**

Note:

Value of x represent P.E. Ratio

Value of y represent Market Price per Share; MPS

Mean,

$$\bar{x} = \frac{\sum X}{N} = 32.61$$

$$\bar{y} = \frac{\sum Y}{N} = 3793.8$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = 21904.69$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 14.30$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 1590.37$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = 0.963$$

$$\text{Coefficient of Determination}\,(r^2) = 0.9274$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0218$$

APENDIX-5

Related to Table 4.10

Correlation between Dividend Payout (DP) Ratio and Market Price per Share (MPS)

(A) Nepal Investment Banks Ltd. (NIBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	31.65	800	3.7	13.69	–725.4	5262.16	–2683.98
2005/06	33.70	1260	5.75	33.06	–265.4	70437.16	–1526.05
2006/07	7.99	1729	–19.96	398.40	203.6	41452.96	–4063.86
2007/08	12.96	2450	–14.99	224.70	924.6	854885.16	–13859.75
2008/09	53.45	1388	25.5	650.25	–137.4	18878.76	–35037.34
n = 5	**$\sum X$= 139.75**	**$\sum Y$= 7627**	$\sum(X-\bar{X})$ **= 0**	$\sum(X-\bar{X})^2$ **= 1320.10**	$\sum(Y-\bar{Y})$ **= 0**	$\sum(Y-\bar{Y})^2$ **= 1511859.2**	$\sum(X-\bar{X})(Y-\bar{Y})$ **= – 25637.34**

Note:

Value of x represent P.E. ratio

Value of y represent market price per share; MPS

Mean

$$\bar{x} = \frac{\sum X}{N} = 29.72$$

$$\bar{y} = \frac{\sum Y}{N} = 1525.4$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = -5127.47$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 16.25$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 549.89$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x,y)}{\sigma_x \sigma_y} = 0.574$$

$$\text{Coefficient of Determination}\,(r^2) = 0.653$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 2024$$

(B) Standard Chartered Bank Ltd. (SCBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	83.83	2345	21.63	467.86	–2975	8850625	–64349.25
2005/06	73.93	3775	11.73	137.59	–1545	2387025	–18122.85
2006/07	47.80	5900	–14.4	207.36	580	336400	–8352
2007/08	60.64	6830	–1.56	2.43	1510	2280100	–2355.60
2008/09	45.32	7750	–16.88	284.93	2430	5904900	-41018.4
n = 5	**$\sum X$= 31162**	**$\sum Y$= 26600**	$\sum(X-\bar{X})$ **= 0**	$\sum(X-\bar{X})^2$ **= 1100.17**	$\sum(Y-\bar{Y})$ **= 0**	$\sum(Y-\bar{Y})^2$ **= 19759050**	$\sum(X-\bar{X})(Y-\bar{Y})$ **= – 134198.1**

Note:

Value of x represent P.E. Ratio

Value of y represent Market Price per Share; MPS

Mean,

$$\bar{x} = \frac{\sum X}{N} = 62.20$$

$$\bar{y} = \frac{\sum Y}{N} = 5320$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = \frac{-8901}{5} = 26839.62$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 14.83$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 1987.92$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = 0.83$$

$$\text{Coefficient of Determination}\,(r^2) = 0.9$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.051$$

(C) NABIL Bank Ltd.

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	66.36	1505	7.71	59.44	–2288.8	5238605.44	–17646.65
2005/06	65.78	2240	7.13	50.84	–1553.8	2414294.44	–11078.94
2006/07	72.95	5050	14.3	204.49	1256.2	1578038.44	17963.66
2007/08	55.40	5275	–3.25	10.56	1481.2	2193953.44	–4813.9
2008/09	32.78	4899	–25.87	669.25	1105.2	1221467.04	–28591.52
n = 5	**ΣX= 293.27**	**ΣY= 18969**	$\Sigma(X-\bar{X})$ = **0**	$\Sigma(X-\bar{X})^2$ = **994.58**	$\Sigma(Y-\bar{Y})$ = **0**	$\Sigma(Y-\bar{Y})^2$ = **12646358.8**	$\Sigma(X-\bar{X})(Y-\bar{Y})$ = **44167.35**

Note:

Value of x represent P.E. Ratio

Value of y represent Market Price per Share; MPS

Mean,

$$\bar{x} = \frac{\Sigma X}{N} = 58.65$$

$$\bar{y} = \frac{\Sigma Y}{N} = 3793.8$$

$$\text{Covariance}\,(x, y) = \frac{\Sigma(x-\bar{x})(y-\bar{y})}{N} = -8833.47$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N}} = 14.10$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\Sigma(y-\bar{y})^2}{N}} = 1590.37$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = -0.39$$

$$\text{Coefficient of Determination}\,(r^2) = 0.1521$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2558$$

APENDIX-5

Related to Table 4.11

Correlation between Dividend Yield and Market Price per Share (MPS)

(A) Nepal Investment Banks Ltd. (NIBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	1.56	800	0.52	0.27	–725.4	5262.16	–377.21
2005/06	1.59	1260	0.55	0.30	–265.4	70437.16	–145.97
2006/07	0.29	1729	–0.75	0.56	203.6	41452.96	–152.7
2007/08	0.31	2450	–0.73	0.53	924.6	854885.16	–674.96
2008/09	1.44	1388	0.4	0.16	–137.4	18878.76	–54.96
n = 5	**$\sum X$= 5.19**	**$\sum Y$= 7627**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = **1.82**	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = **1511859.2**	$\sum(X-\bar{X})(Y-\bar{Y})$ = **– 1405.8**

Note:

Value of x represent P.E. Ratio

Value of y represent Market Price per Share; MPS

Mean

$$\bar{x} = \frac{\sum X}{N} = 1.04$$

$$\bar{y} = \frac{\sum Y}{N} = 1525.4$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = -281.16$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 0.60$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 549.88$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x,y)}{\sigma_x \sigma_y} = -0.852$$

$$\text{Coefficient of Determination}\,(r^2) = 0.726$$

$$\text{Probable Error of Correlation Coefficient P.E.}\,(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.083$$

(B) Standard Chartered Bank Ltd. (SCBL)

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	5.12	2345	2.77	7.67	–2975	8850625	–8240.75
2005/06	3.44	3775	1.09	1.19	–1545	2387025	–1684.05
2006/07	1.36	5900	–0.99	0.98	580	336400	–574.20
2007/08	1.17	6830	–1.18	1.39	1510	2280100	–1781.8
2008/09	0.65	7750	–1.7	2.89	2430	5904900	–4131
n = 5	**$\sum X$= 11.74**	**$\sum Y$= 26600**	$\sum(X-\bar{X})$ **= 0**	$\sum(X-\bar{X})^2$ **= 14.12**	$\sum(Y-\bar{Y})$ **= 0**	$\sum(Y-\bar{Y})^2$ **= 19759050**	$\sum(X-\bar{X})(Y-\bar{Y})$ **= –16411.8**

Note:

Value of x represent P.E. Ratio

Value of y represent Market Price per Share; MPS

Mean,

$$\bar{x} = \frac{\sum X}{N} = 2.35$$

$$\bar{y} = \frac{\sum Y}{N} = 5320$$

$$\text{Covariance}\,(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = -3282.36$$

$$\text{Standard Deviation of } x\,(\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 1.68$$

$$\text{Standard Deviation of } x\,(y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 1987.92$$

$$\text{Coefficient of Correlation}\,(\gamma) = \frac{\text{Covarinace}\,(x, y)}{\sigma_x \sigma_y} = 0.98$$

$$\text{Coefficient of Determination}\,(r^2) = 0.9604$$

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

(C) NABIL Bank Ltd.

Year	**X**	**Y**	$(X-\bar{X})$	$(X-\bar{X})^2$	$(Y-\bar{Y})$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$
2004/05	4.65	1505	2.2	4.84	-2288.8	5238605.44	-5035.36
2005/06	3.79	2240	1.34	1.80	-1553.8	2414294.44	-2082.10
2006/07	1.98	5050	-0.47	0.22	1256.2	1578038.44	-590.41
2007/08	1.13	5275	-1.32	1.74	1481.2	2193953.44	-1955.18
2008/09	0.71	4899	-1.74	3.03	1105.2	1221467.04	-1923.04
n = 5	**$\sum X$= 12.26**	**$\sum Y$= 18969**	$\sum(X-\bar{X})$ = **0**	$\sum(X-\bar{X})^2$ = **11.63**	$\sum(Y-\bar{Y})$ = **0**	$\sum(Y-\bar{Y})^2$ = **12646358.8**	$\sum(X-\bar{X})(Y-\bar{Y})$ = **−11586.09**

Note:

Value of x represent P.E. Ratio

Value of y represent Market Price per Share; MPS

Mean,

$$\bar{x} = \frac{\sum X}{N} = 2.45$$

$$\bar{y} = \frac{\sum Y}{N} = 3793.8$$

$$\text{Covariance}(x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{N} = -2317.22$$

$$\text{Standard Deviation of } x\ (\sigma_x) = \sqrt{\frac{\sum(x-\bar{x})^2}{N}} = 1.53$$

$$\text{Standard Deviation of } x\ (y_x) = \sqrt{\frac{\sum(y-\bar{y})^2}{N}} = 1590.37$$

$$\text{Coefficient of correlation } (\gamma) = \frac{\text{Covarinace}(x, y)}{\sigma_x \sigma_y} = -0.95$$

$$\text{Coefficient of Determination } (r^2) = 0.9025$$

$$\text{Probable Error of Correlation Coefficient P.E.}(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0294$$

APPENDIX-7

Related to table 4.1

Regression analysis between market price per share (MPS) and earning price per share (EPS)

(A) Nepal Investment Bank Ltd. (NIBC)

Year	X	Y	XY	X^2	Y^2	$(X-\bar{X})$	$(X-\bar{X})^2$
2004/05	39.50	800	31600	1530.25	640000	-11.84	140.18
2005/06	59.35	1260	74781	3522.42	1587600	8.01	64.16
2006/07	62.57	1729	108183.53	3915.0	2989441	11.23	126.11
2007/08	57.87	2450	141781.5	3348.44	6002500	6.53	42.64
2008/09	37.42	1388	51938.96	1400.26	1926544	-13.92	193.77
n = 5	**∑X= 256.72**	**∑Y= 7627**	**∑XY = 408284.99**	**∑X² = 13746.87**	**∑Y² = 13146085**		**∑(X − X̄)² = 566.86**

Note:

Value of 'X' represents Earning per Share EPS

Value of 'Y' represents Market Price per Share; MPS

Mean,

$$\bar{X} = \frac{\sum x}{N} = 51.34$$

$$\bar{Y} = \frac{\sum y}{N} = 1525.4$$

$$\text{Coefficient of Correlation (r)} = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum^1 - (\sum X)^2}\sqrt{N\sum Y^2 - (\sum Y)^2}} = -0.57$$

Coefficient of Determination $(r)^2 = 0.325$

Regression of y on x

y=a+bx

Where,

a= Regression constant

b= Regression coefficient (slope of the regression lines)

According to the principle, two normal equations for estimation for estimating two numerical constant a & b are given by

$\sum y = na + b\sum x$

$\sum xy = a\sum x + b\sum x^2$

Solving these two normal equations we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2} = 29.4532$$

$a = \bar{y} - b\bar{x}\ y = 13.44$

Standard Error of the Estimate (S.E.e) $= \sqrt{\frac{y - a\sum y - b\sum xy}{n-2}} = 582.98$

Standard error of regression coefficient (S_b)$= \frac{S.E.e}{\sqrt{\sum (x - \bar{x})^2}} = 24.49$

(B) Standard Chartered Bank Ltd. (SCBL)

Year	**X**	**Y**	**XY**	**X^2**	**Y^2**	**$(X - \bar{X})$**	**$(X - \bar{X})^2$**
2004/05	143.14	2345	335663.3	20489.06	5499025	-2.58	6.66
2005/06	175.84	3775	663796	30919.71	14250625	30.12	907.21
2006/07	167.37	5900	987483	28012.72	34810000	21.65	468.72
2007/08	131.92	6830	901013.6	17402.89	46648900	-13.8	190.44
2008/09	110.33	7750	855057.5	12172.71	60062500	-35.39	1252.45
N = 5	**$\sum x$ =728.6**	**$\sum y$ = 26600**	**$\sum xy$= 3743013.4**	**$\sum x^2$= 10899710**	**$\sum y^2$= 161271050**		**$\sum (x - \bar{x})^2$ =2825.48**

Note:

Value of 'X' represents Earning per Share EPS

Value of 'Y' represents market price per share; MPS

Mean,

$\bar{X} = \frac{\sum x}{N} = 145.72$

$\bar{Y} = \frac{\sum y}{N} = 5320$

Coefficient of Correlation (r)$= \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2 - (\sum y)^2}} = 0.563$

Coefficient of Correlation $(r)^2 = 0.317$

Regression Equation of Y on X

$y=a+bx$

Where,

a= Regression Constant

b= Regression Coefficient (slope of the regression lines)

According to the principle, two normal equations for estimation for estimating two numerical constant a & b are given by

$\sum y=na+b\sum x$

$\sum xy=a\sum x+b\sum x^2$

Solving these two normal equation we get

$$b=\frac{n\sum xy-\sum x\sum y}{n\sum x^2-(\sum x)^2}=-47.12$$

$a=\bar{y}-b\bar{x}\,y=12.9$

Standard Error of the Estimate (S. $\sum e$) $=\sqrt{\frac{y-a\sum y-b\sum xy}{n-2}=10603.73}$

Standard Error of Regression Coefficient $(S_b)=\frac{S.E.e}{\sqrt{\sum(x-\bar{x})^2}}=3.7529$

(C) Nabil Bank Ltd.

Year	**X**	**Y**	**XY**	$\mathbf{X^2}$	$\mathbf{Y^2}$	$\mathbf{(X-\bar{X})}$	$\mathbf{(X-\bar{X})^2}$
2004/05	105.49	1505	158762.45	11128.14	2265025	11.33	141.13
2005/06	129	2240	289494	16695.22	5017600	17.84	140.19
2006/07	137.08	5050	692254	18790.93	25502500	79.71	388.48
2007/08	108.31	5275	571335.25	11731.06	27825625	-9.06	82.08
2008/09	106.76	4899	523017.24	11397.70	24000201	-10.61	112.57
N = 5	$\sum$ **x = 586.85**	$\sum$ **y = 18969**	$\sum$ **xy= 2234799.34**	$\sum \mathbf{x^2}$**= 69742.45**	$\sum \mathbf{y^2}$**= 84610951**		$\sum$ **(x-** $\bar{x}$ **)^2 =864.45**

Note:

Value of 'X' represents Earning per Share EPS

Value of 'Y' represents Market Price per Share; MPS

Mean,

$\overline{X} = \frac{\sum x}{N} = 117.37$

$\overline{Y} = \frac{\sum y}{N} = 3793.8$

Coefficient of correlation (r) = $\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2 - (\sum y)^2}} = 0.08$

Coefficient of Correlation $(r)^2 = 0.0064$

Regression Equation of Y on X

$y=a+bx$

Where,

a= Regression Constant

b= Regression Coefficient (slope of the regression lines)

According to the principle, two normal equations for estimation for estimating two numerical constant a & b are given by

$\sum y = na + b\sum x$

$\sum xy = a\sum x + b\sum x^2$

Solving these two normal equations we get

$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2} = 9.73$

$a = \bar{y} - b\bar{x}$ y=2651.79

Standard Error of the Estimate (S.E.e) = $\sqrt{\frac{y - a\sum y - b\sum xy}{n-2}} = 2046.51$

Standard Error of Regression Coefficient (S_b)= $\frac{S.E.e}{\sqrt{\sum (x - \bar{x})^2}} = 2.37$

APPENDIX-8

Related to Table 4.13

Regression analysis between market price per share and dividend per share (DPS)

A) Nepal Investment Bank Ltd. (NIBL)

Year	X	Y	XY	X^2	Y^2	$(X-\overline{X})$	$(X-\overline{X})^2$
2004/05	12.50	800	10000	156.25	640000	-0.5	0.25
2005/06	20	1260	25200	400	1587600	7	49
2006/07	5	1729	8645	25	2989441	-8	64
2007/08	7.50	2450	18375	50.25	6002500	-5.5	30.25
2008/09	20	1388	27760	400	1926544	7	49
N = 5	**$\sum x$ = 65**	**$\sum y$ = 7627**	**$\sum xy$= 89980**	**$\sum x^2$= 1037.5**	**$\sum y^2$= 13146085**		**$\sum (x-\overline{x})^2$ =192.5**

Note:

Value of 'X' represents Earning per Share EPS

Value of 'Y' represents Market Price per Share; MPS

Mean,

$$\overline{X} = \frac{\sum x}{N} = 13$$

$$\overline{Y} = \frac{\sum y}{N} = 1525.4$$

Coefficient of Correlation (r)= $$\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2 - (\sum y)^2}} = 0.538$$

Coefficient of Correlation $(r)^2 = 0.2894$

Regression Equation of Y on X

$y=a+bx$

Where,

a= Regression Constant

b= Regression Coefficient (slope of the regression line)

According to the principle of least squares, two normal equations for estimation for estimating two numerical constant a & b are given by

$\sum y = na + b\sum x$

$\sum xy = a\sum x + b\sum x^2$

Solving these two normal equations we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2} = 47.64$$

$a = \bar{y} - b\bar{x}\ y = 2144.72$

Standard Error of the Estimate (S.E.e) = $\sqrt{\frac{y - a\sum y - b\sum xy}{n-2}} = 598.60$

Standard Error of Regression Coefficient (S_b)= $\frac{S.E.e}{\sqrt{\sum(x-\bar{x})^2}} = 43.14$

B) Standard chartered Bank Ltd. (SCBL)

Year	**X**	**Y**	**XY**	$\mathbf{X^2}$	$\mathbf{Y^2}$	$\mathbf{(X-\bar{X})}$	$\mathbf{(X-\bar{X})^2}$
2004/05	120	2345	281400	14400	5499025	28	784
2005/06	130	3775	490750	16900	14250.05	38	1444
2006/07	80	5900	472000	6400	3481000	-12	144
2007/08	80	6830	546400	6400	46648900	-12	144
2008/09	50	7750	387500	2500	60062500	-42	1764
N = 5	$\sum$ **x = 460**	$\sum$ **y = 26600**	$\sum$ **xy= 2178050**	$\sum \mathbf{x^2}$**= 46600**	$\sum \mathbf{y^2}$**= 161271050**		$\sum$ **(x-** $\bar{x}$ **)^2= 4280**

Note:

Value of 'X' represents dividend per share

Value of 'Y' represents market price per share; MPS

Mean,

$$\bar{X} = \frac{\sum x}{N} = 92$$

$$\bar{Y} = \frac{\sum y}{N} = 5320$$

Coefficient of correlation (r)= $\frac{n\sum xy - \sum x\sum y}{\sqrt{n\sum x^2 - (\sum x)^2 - (\sum y)^2}} = -0.925$

Coefficient of Correlation $(r)^2$=0.8556

Regression Equation of Y on X

y=a+bx

Where,

a= Regression Constant

b= Regression Coefficient (slope of the regression lines)

According to the principle, of least squares two normal equations for estimation for estimating two numerical constant a & b are given by

$\sum y = na + b\sum x$

$\sum xy = a\sum x + b\sum x^2$

Solving these two normal equations we get

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2} = -62.89$$

$a = \bar{y} - b\bar{x}\, y = 11105.88$

Standard Error of the Estimate (S. $\sum e$) $= \sqrt{\frac{y - a\sum y - b\sum xy}{n-2}} = 971.63$

Standard error of Regression Coefficient (S_b)= $\frac{S.E.e}{\sqrt{\sum (x - \bar{x})^2}} = 14.8518$

C) Nabil Bank Ltd. (SCBL)

Year	**X**	**Y**	**XY**	**X^2**	**Y^2**	**$(X - \bar{X})$**	**$(X - \bar{X})^2$**
2004/05	70	1505	105350	4900	2265025	0	0
2005/06	85	2240	190400	7225	5017600	15	225
2006/07	100	5050	505000	10000	25502500	30	900
2007/08	60	5275	316500	3600	27825625	-10	100
2008/09	35	4899	171465	1225	24000201	-35	1225
N = 5	**$\sum x$ =350**	**$\sum y$ = 18969**	**$\sum xy$= 1288715**	**$\sum x^2$= 26950**	**$\sum y^2$= 84610951**		**$\sum (x - \bar{x})^2$= 2450**

Note:

Value of 'X' represents Dividend per Share; DPS

Value of 'Y' represents Market Price per Share; MPS

Mean,

$\overline{X} = \frac{\sum x}{N} = 70$

$\overline{Y} = \frac{\sum y}{N} = 3793.8$

Coefficient of Correlation (r)= $\frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2 - (\sum y)^2}} = -0.22$

Coefficient of Correlation $(r)^2 = 0.484$

Regression equation of Y on X

$y = a + bx$

Where,

a= Regression constant

b= Regression coefficient (slope of the regression lines)

According to the principle, of least squares two normal equations for estimation for estimating two numerical constant a & b are given by

$\sum y = na + b\sum x$

$\sum xy = a\sum x + b\sum x^2$

Solving these two normal equations we get

$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2} = -15.96$

$a = \bar{y} - b\bar{x}\ y = 11911$

Standard Error of the Estimate (S.E.e) = $\sqrt{\frac{y - a\sum y - b\sum xy}{n-2}} = 5918.49$

Standard Error of Regression Coefficient (S_b)= $\frac{S.E.e}{\sqrt{\sum (x - \bar{x})^2}} = 119.572$

APPENDIX-9

Related to Table 4.14

(A) One-way Analysis of Variance (ANOVA) for Dividend per Share (DPS)

Year	NIBL (X_1)	SCBL (X_2)	NABIL (X_3)	X_1^2	X_2^2	X_3^2
2004/05	12.50	120	70	156.25	14400	4900
2005/06	20.00	130	85	400	16900	7225
2006/07	5.00	80	100	25	6400	10000
2007/08	7.50	80	60	56.25	6400	3600
2008/09	20.00	50	35	400	2500	1225
	$\sum X_1$= 65	**$\sum X_2$= 460**	**$\sum X_3$= 350**	**$\sum X_1^2$ = 1037.5**	**$\sum X_2^2$ = 46600**	**$\sum X_3^2$ = 26950**

Note:

Value of X_1, X_2, X_3 represents Dividend per Share (DPS) of NIBL, SCBL & NABIL respectively.

Grand Total (T) = $\sum X_1 + \sum X_2 + \sum X_3 = 875$

$$\text{Correction Factors (CF)} = \frac{T2}{n} = 51041.67$$

$$\text{Total Sum of Squares(TSS)} = \sum X_1^2 + \sum X_2^2 + \sum X_3^2 - \text{C.F.} = 23545.83$$

$$\text{Sum of squares due to row or between banks (SSR)} = \frac{(\sum x_1)^2}{n_1} + \frac{(\sum x_2)^2}{n_2} + \frac{(\sum x_3)^2}{n_3} - \text{C.F}$$

$$= 845 + 42320 + 42500 - 21.41.67 = 16623.33$$

$$\text{Sum of Squares due to Erros or with in banks (SSE)} = \text{TSS} - \text{SSR}$$

$$= 6922.5$$

(B) One-way Analysis of Variance (ANOVA) for Earning per Share (EPS)

Year	NIBL (X_1)	SCBL (X_2)	NABIL (X_3)	X_1^2	X_2^2	X_3^2
2004/05	39.50	143.14	70	1560.25	20489.01	4900
2005/06	59.35	175.84	85	3522.42	30919.71	7225
2006/07	62.57	167.87	100	3915.00	28180.34	10,000
2007/08	57.87	131.92	60	3348.94	17402.89	3600
2008/09	37.42	110.33	35	1450.26	12172.72	1225
	$\sum X_1$= 256.71	**$\sum X_2$= 729.10**	**$\sum X_3$= 350**	**$\sum X_1^2$ = 3746.87**	**$\sum X_2^2$ = 109164.66**	**$\sum X_3^2$ = 26950**

Note:

Value of X_1, X_2, X_3 represents Dividend per Share (EPS) of NIBL, SCBL & NABIL respectively.

Grand Total (T) = $\sum X_1 + \sum X_2 + \sum X_3 = 1335.81$

$$\text{Correction Factors (CF)} = \frac{T2}{n} = 118959.22$$

$$\text{Total Sum of Squares(TSS)} = \sum X_1^2 + \sum X_2^2 + \sum X_3^2 - \text{C.F.} = 30309.31$$

$$\text{Sum of squares due to row or between banks (SSR)} = \frac{(\sum x_1)^2}{n_1} + \frac{(\sum x_2)^2}{n_2} + \frac{(\sum x_3)^2}{n_3} - \text{C.F}$$

$$= 19180 + 106317 + 36 + 24500 - 118959 = 25038.36$$

$$\text{Sum of Squares due to Erros or with in banks (SSE)} = \text{TSS} - \text{SSR}$$

$$= 5863.95$$

(C) One-way Analysis of Variance (ANOVA) for Dividend per Share (DPR)

Year	NIBL (X_1)	SCBL (X_2)	NABIL (X_3)	X_1^2	X_2^2	X_3^2
2004/05	31.65	83.83	66.36	100.72	7027.47	44.3.65
2005/06	33.70	73.93	65.78	1135.69	5465.64	4327
2006/07	7.99	47.80	72.95	63.84	2284.84	5321.70
2007/08	12.96	60.64	55.40	167.96	3677.21	3069.16
2008/09	53.45	45.32	32.78	2856.90	2053.90	1074.53
	$\sum X_1$= 139.75	**$\sum X_2$= 311.52**	**$\sum X_3$= 293.27**	**$\sum X_1^2$ = 5226.11**	**$\sum X_2^2$ = 20509.06**	**$\sum X_3^2$ = 18196.04**

Note:

Value of X_1, X_2, X_3 represents Dividend per Share (DPS) of NIBL, SCBL & NABIL respectively.

Grand Total (T) = $\sum X_1 + \sum X_2 + \sum X_3 = 744.54$

$$\text{Correction Factors (CF)} = \frac{T2}{n} = 36956$$

$$\text{Total Sum of Squares(TSS)} = \sum X_1^2 + \sum X_2^2 + \sum X_3^2 - \text{C.F.} = 6975.21$$

$$\text{Sum of squares due to row or between banks (SSR)} = \frac{(\sum x_1)^2}{n_1} + \frac{(\sum x_2)^2}{n_2} + \frac{(\sum x_3)^2}{n_3} - \text{C.F}$$

$$= 3906.01 + 19408.94 + 17201.47 - 36956 = 3560.42$$

$$\text{Sum of Squares due to Erros or with in banks (SSE)} = \text{TSS} - \text{SSR}$$

$$= 3414.79$$