CHAPTER -I
INTRODUCTION

1.1 Background of the Study

The world is in full of risks and uncertainty. No jobs are free in human life. Human beings are afraid of risk and uncertainty because they suffered a lot due to risk. The development of civilization introduced ways and systems for safety against future uncertainty. One of the ways is the insurance thus, insurance is defined as a cooperative device to spread the loss caused by a particular risk over a number of person who are exposed to it and who agree to ensure themselves against to co-operative each other at the time of loss. The loss cannot be averted but loss occurring due to a certain risk can be distributed among the agreed persons. Anyone of them may suffer from loss to a given risk. So the rest of the persons who are agreed will share the loss. The main function of the insurance companies is to collect premium and mobilized such collected funds in to various sector of economy with an organized and institutional manner.

Economically, Nepal is in developing stage so, the establishment of financial institution is most important. Risk is the uncertainty of financial loss. In other words, insurance is a co-operative device of distribution of losses, falling on an individual or his family over a larger no. of persons, each hearing nominal expenditure and feeling secure against heavy loss.

The more specific definition can be given as such, insurance is a contract where "one party (The insurer) agree to pay the other party (the ensured or his beneficiary) a certain sum called premium upon a given contingency (the risk) against which insurance is sought "Thus insurance safeguards the interest of people from uncertainty by providing certainty of payment at a given contingency. In the financial structure of Nation, insurance companies constitute one of the most important components. Insurance companies play two vital roles in the economy safeguarding against the risk of loss of property and life and accumulation of resources. The second role exploits long-term funds where as the first role is extremely unique.

Now days, insurance companies play a vital role for development of the nation as well for the world's economy. Though the history of insurance companies of Nepal is not long but it has taken long way to come up into the present situation. In

Nepalese society, the concept of insurance can be traced down to the Gouthi system and joint family culture that has been prevalent since the ancient times. These system have been provided security and assistance to individuals and families in times of need with the change in the economic and social perspectives and the increasing complexities of the up coming small scale industries an immense need for a domestic insurance company well felt to insure against any loss that could arise due to mishaps in industries.

It has been more that sixty years, since insurance business started in the country. The advent of this business was through the Indians. There were four Indian insurance companies V.Z. Rubby general insurance, premier insurance company, life insurance Company (LIC) and National Insurance Company by the Indian government, only two of the above mentioned companies remained in Nepal. However they were established under different names. The oriental insurance company ltd. (1967 A.D.) and National Insurance Company (1987 A.D.) are still operating in Nepal. On 24th September,1947 A.D. "Nepal Mall Chalani Taatha Bima Co." [Known as Nepal insurance and transport Co. Ltd. since 1959 again Nepal insurance Co. since 1991] a small insurance company come into existence. This company has been established with an initial investment of Rs. 5 Lakhs under the ownership of Nepal Bank Ltd. to few places and its niche market.

For this reason the Indian companies that were providing life as will as non-life took over the Nepalese market. The premium that accrued every year to their companies was Rs. 80 Lakhs as reveled by the third 5 years plan.

The large saving of amount could have been used for the nations economic development only of there was a nationality owned insurance company. Thus a need of insurance company that would in corporate every type of insurance function was also felt at the government level. This resulted to be establishment of Rastriya Beema Sansthan on 15th December 1968 A.D. The company was established as a private company with an authorized capital of Rs. 1 corer and capital issued was Rs. 15 Lakhs under company act 1964 A.D. (2021 B.S.). The company started its business by insuring king Mahendra's car. A year later, the company operated its work by same name but under National Insurance act 1968 A.D. (2025 B.S.). Five years later of its establishment, life insurance was introduced.

After the introduction of insurance act, the number of private insurance companies comes into existence. There are all together 18 insurance companies in

Nepal out of which 17 companies are listed in Nepal stock exchange (NEPSE). For the research study purpose only listed insurance companies are selected.

There are usually in practice various types of dividend policy & also payment procedure in insurance companies according to the objectives and policies they implemented as well as the circumstances they face. The policy they follow may differ from each other due to rationality of executive decision-maker. The type of dividend that corporation follow is partly in matter of attitude of directors and partly a matter of various circumstances and financial constraints that bond corporate plan & policies.

Generally dividend are paid in the form of cash. But, according to changing needs of corporations, dividend is being distributed is several forms.

(a) Interim dividend

Generally dividend is declared in the last of financial year. This is called regular dividend. Many times directors can declare the dividend before the end of financial year as their meeting declared. This is called interim dividend.

(b) Cash Dividend

Cash dividend is the dividend, which is distributed to the shareholders in cash out of the earnings of the company.

(c) Property Dividend

Instead of cash dividend can be given in the form of property. This method of paying dividend is rarely used, it is distributed when assets are considered no longer essential in the operation of the business or in extra ordinary circumstance. Such assets may be product of company itself or securities of subsidiaries owned by the company.

(d) Bond Dividend

Another aspect of dividend payment is bond dividend. It is rare phenomenon and long tern enough to fall the current liability. Their bonds can be long tern bonds. There are given when the companies unable to take the burden of dividend are given on which interest is big paid. They are also called a script dividend. Script dividends are of short-term nature which are payable in six month period.

(e) Composite Dividend

If the dividend is paid partly in the form of property, and partly in the form of cash, then the dividend said to be composite dividend. More over instead of giving

composite dividend company can give the option to its shareholders either to take the dividend in cash or in property. This payment is known as optional dividend.

(f) Special dividend

When directors of the company do not want to change the dividend separately the company paid special scheme to its shareholders at any regular dividend distribution period is known as special dividend. It is any possible when the companies have good cash & reserve this dividend is given with regular dividend but separately.

(g) Stock dividend

Stock dividend occurs when the board of directors authorizes a distribution of common stock to existing shareholders. The stock dividend implies the payment of conditional share instead of cash to existing shareholders in the proportion to old numbers of shares they already owned. Stock dividend requires an accounting entry transfer from the retained earnings account to the common stock and paid in capital accounts.

Rupee transferred from retained earnings

= No. Of share outstanding X % of stock dividend X market price of stock.

There is no cash involved in a stock dividend. Net worth remains unchanged, and numbers of share is increased. (Rishi Raj Gautam & Kiran Thapa 2000)

1.2 Focus of the study

The main focus of the study is to examine the practice made by the Nepalese insurance companies in regards to the dividend policy. But for whole these purpose different other studies are going to be done i.e. comparison of earning per share (EPS) dividend per share (DPS), Market price per share (MPS) and others as per the requirement with respect to the sample firms. The relationship between different variables will be individually & combined analyzed in order to state the particular suggestion. In most commonly as well as gradually the researcher will focus on following subject matters:

(i) Review of the dividend policy of selected companies as well as other related samples.

(ii) Assessment of effects of dividend decision on stock price.

(iii) Behavioral aspects of Nepalese investors in regard to dividend practices made in past five years by the sample firms.

1.3 Statement of the problem

Shareholders make investment in equity capital with expectation of making earnings. Dividend is a kind of earnings that the shareholders expect from their investment. But the dividend decision is still a fundamental as well as controversial area of managerial finance. The affect of dividend policy on a corporation's market value (or market price of share) is a subject of long standing argument. But, still there is no single conclusive result regarding the relationship between the dividend payment & market price of share.

Moreover, dividend the most inspiring factor for the investment on shares of the company is thus desirable from the stockholders point of view, however Nepalese insurance companies have no satisfactory result about dividend decision. Dividend decision however is crucial as well as controversial area of financial management. It is partly due to the various government rules & regulations acting and reaching in the banking operations.

The capital market is an important part of corporate development of a country. The capital market in Nepal is still in early age. However Nepalese investors have heavily made the investment on newly established companies, especially in the financial sector. This trend will remain to continue until the investors are satisfied by the decision made by management of there companies for an investor. Even if dividends affected the firms value or market price of firm's share, unless management knows exactly how they affect values, there is not much that they can do to increase the shareholder's wealth.

Thus there are many dimensions to be considered on dividend policies & practices, and there are still many questions unanswered, raised by the dividend policy.

1.4 Research Questions

The research question is to find out what sorts of limitation or gap have made a culture of stock-price charge.

The study tries to answer such questions.

(i) What kind of dividend policy the insurance companies are applying?

(ii) Does the dividend decision affect the stock price of different selected insurance companies?

(iii) What is the relation of dividend with EPS, DPS, and MPS?

(iv) What is the provision of Beema Samiti towards Nepalese insurance companies with respect to dividend distribution?

1.5 Objective of the Study

The basic objective of the study is to obtain in-depth the knowledge about the impact of dividend policy adopted by the selected companies to its market price of shares. Moreover, the core objective of the study is to examine and inviolate the dividend policy and its impact on stock price of Nepalese insurance companies. Some of the important other objectives of this study can be summarized as below.

1. To study whether the insurance companies are following the suitable dividend policy or not.
2. To judge the impact of dividend on market price of share of selected samples.
3. To study the relationship of dividend policy with various financial indicators like EPS, DPS, MPS, D/P ratio DY & P/E ratio.
4. To provide the suggestions to the stakeholder on the basis of findings.

1.6 Significance of the Study

There are many investment opportunities among the basic circles. Investors have the choice either they can invest in own land or abroad. But actually in the context of capital market, mainly investors can invest either in shares or debenture or other financial assets. Now a days people are attracted to invest in share for the purpose of getting greater return. So dividend policy has

become an effective way to attract new investors to keep present investors happy to maintain goodwill and to increase the value of stock of the company.

In capital market, in case of ordinary share, returned can be earned in two ways (I) by means of dividends (ii) by capital gain. In Nepal, there is extreme necessity to establish clear conception about the return that yield from investing in securities.

Therefore, this thesis in an in a endeavor to overcome this gap to some extent and has considerable importance significance of the study are as follows;

(i) This study will be helpful for further researcher.

(ii) The dividend policy of insurance sector play a vital role for social economic development in the nation, that is why the study of dividend policy of this sector is needed so far as possible.

(iii) The study helps to management of selected sample firms and their policy maker in setting and making a suitable dividend policy.

(iv) To raise the public awareness that dividend policy and market price of share relation in order to help them for rations decision for their investment.

1.7. Limitation of the Study

This study will interpret and analysis the dividend distribution practices relationship with earning per share (EPS), market price per share etc. This study is only a partial ful-fillment of MBS programs. So this study will be limited by following factors.

1. This study analyze the impact of stock policies only concerned with Insurance Company of Nepal.
2. Most of the data used in the research are secondary nature.
3. Act of the data are based in fiscal year 2005/00 to2009/004.
4. Among various insurance companies, the study will be concentrate only five insurance companies as samples covering the five years data.
5. Among the different aspect of dividend, only cash dividend stock dividend is taken for the analysis.
6. There may be various factors that affect divided policy. But it is not possible to study all the factors. So certain factors like EPS, DPS MPS, D/P ratio, dividend yield (DY) are taken into consideration.

7. This study will be based on data dividend from annual report, web site, i.e. income statement, P/L, A/c, Balance sheet.

1.8 Organization of the Study

This study report has five section including introduction, review of literature, research methodology, data presentation & analysis, summary, conclusion and suggestions.

Chapter 1: Introduction

First chapter contains introduction. It includes background of the study, objective of the study, statement of problems, significance of the study, focus of the study & limitation of the study.

Chapter II: Review of literature

Second chapter includes some relevant literature available on the subject matter of the study. It consists of literature on emergence of concept of dividend policy from the review of books, articles, and thesis related to the study field.

Chapter III: Research methodology

This chapter includes framework and procedure of the study. It deals with research methodology used to carry out the search. It includes research design, population & sample, sources & technique of data collection, data analysis tools, & limitations to the methodology.

Chapter IV: Data presentation and analysis

The fourth chapter contains presentation of data, their analysis, & interpretation using financial & statistical tools. It also consists the major finding of the study.

Chapter V: Summary, conclusion, and recommendation

It contains the summary of the study, conclusion, & the possible suggestions.

Finally, Appendices contain list of bibliography, copies of different sheets having information required for the study & different basic calculations.

CHAPTER -II

REVIEW OF LITERATURE

In this chapter, some of the basic literature on Dividend policy and stock behavior as well as move mental effects is reviewed. It includes literature regarding concept and review of previous as well as various studies.

2.1 Conceptual Framework

In ordinary sense, dividend is stated as remaining earning left to the ordinary stockholders, what investment opportunities, moreover it refers to that portion of retaining distributed as unread fund of the company either in the forms of direct cash or something else. In other hand divined is as per periodic payment made to the stockholders to compensate them for the use of and risk to their investment funds. It is that portion of the net earning distributed by the company among the shareholders as the return for their money invested.

Dividend policy is a consistent approach to the distribution versus retention decision. Actually, it determines the division of earnings between payment to stockholders & reinvestment in the firm. Retaining earnings one of the most significant sources of funds for financing corporate growth, but dividend constitute the cash flow that accrues to the stockholders. (F.Brighham "Managerial Finance" 7th edition)

Dividend policy decision is one of the major decision of financial management, which affects the financial structure, the flow of funds, corporate liquidity & investors attitudes.

The Dividend policy decision adopted by the firm should be such that it strikes a proper balance between the financing decision and wealth maximization decision. There is a reciprocal relationship between the retained earning and cash dividend. If retained earning is kept more by the company less will be dividend and vice versa

The dividend policy should be optimal which balances the opposing forces and maximizes stock price. (Gautam and Thapa 2000)

2.2 Review of related Studies

2.2.1 Review of major international studies

There are so many studies made by different persons and institutions for dividend policy and stock price. There are two opinions regarding to dividend pay out and market price of share. The first point of views is dividends are irrelevant and the amount of dividend payment doesn't affect the market value of the share. The other dividends are relevant and amount of dividend paid affect the market price of shares. Always a critical and confused question has arose, whether dividend policy affect the market value of the share or not. To put light in these matter different studies made by different international scholars and researcher should be overviewed. This study draws heavily from these studies to carry it out.

1. Walter's model

Professor James E. Walter argues that choice of dividend policies almost always affect the value of the enterprise. In other hand dividend policy of the firm affects the value of the shares. His model support that dividends are relevant. He argues that that the investment policy of the firm can not be separated from its dividend policy; according to him both are inter linked which is just opposite to Modigliani & Miller approach. Walter's model shows clearly the importance of relationship between the return on a firm's investment or its internal rate of return (r) and cost of capital or required rate of return (k) in determining the dividend policy. As long as the internal rate of return (r) greater than the cost of capital, the share price will be enhanced by retention and will vary inversely with dividend payment. In this way Walter's model is also known as optimal theory of dividend. The firm finances all investment through retained earnings; The external sources of fund (i.e. debt or new equity) are not used.

Firm's internal rate of return (r) and cost of capital (k) are constant. All earning are either distributed as dividend or reinvested internally. There is no change in value of earning per share (E) and dividend per share (D). The value of 'E' and 'D' remain constant, although there may be changed in the model for determining the result. The firm has a perpetual life or infinite life.

The formula determines to find the market price per share is follows:

$$P = \frac{DPS}{K} + \frac{r(EPS-DPS) / k}{K}$$

Where,

P = Market price per share

DPS = Dividend per share

EPS = Earning per share

r = Firm's internal rate of return

k = Firm's cost of capital or capitalization rate

Walter's model shows that there are three probable conditions of the firm for comparing the relationship between r and k.

(i) r > k (Growth firm)

If the internal rate of return is greater than cost of capital, it is better to retain earnings. There type of firm are able to reinvest earnings at a rate (r), which is greater than the rare expected by shareholder (k). They will be maximizing the value per share, if they follow a policy of retaining all earning for internal investment in this situation firms have received greater opportunity to reinvest the shareholder's earning i.e. firm's earnings.

The market value per shall increases by decreasing the dividend in such a condition. The market value per share will be in increasing trends when distribution of dividend will be in decreasing trend.

(ii) r = k (Normal Firm)

If internal rate of return is equal to it's required rate of return (i.e. cost of capital (k), the dividend pay out does not affect the market value of share. This kind of firm is known as normal firm. Whether the earnings are retain or distributed, it is a matter of indifference for a normal firm in other worlds, the market value of share remains constant for the entire, be it zero or hundred, pay out ratio. Therefore there is no optimum dividend policy for such firm. Thus the market value per share is not affected by the pay out ratio when r = k.

(iii) r < k (Declining Firm)

Firms having no profitable investment opportunities are called declining firm. These firms have lower internal rate of return than its cost of capital. This situation recommends that shareholders can earn higher return by investing else where themselves hence increasing the dividend pay out increases the market value per share. Therefore distributing entire earning as dividend maximizes the market price of share. The optimum pay out is to pay 100 percent of earnings.

2. Modiglani & Miller's study

Frunceo Modigliani and Merton Miller First propounded the major argument indicating that dividends are irrelevant in 1961. It is popularly known as M-M approach. It is sometimes termed as "Dividend Irrelevance Model". This approach state that the value of the firm is determined by the earning power of the firm's assets or its investment policy and that the manner in which the earnings stream is split between dividends and retained earnings do not affect this value. In other words the value of the firm is determined only by its basic earning power and it's business risk, thus the value of the firm depends on the income of the firm, its assets composition and not on how this income is split between dividends and retain earnings?

The M-M approach of irreverence dividend based on the critical assumptions. The firm operates in prefect capital markets in which all investors are rational. Information is readily available to all investors at no cost, instantaneous transaction with out cost, infinitely divisible securities and no investors are large enough to affect the market price of the security. There is no transaction cost.

The securities can be purchased & sold without payment any commission or brokerage etc. Taxes do not exist, given investment policy of the firm, no subject to change, prefect certainty by every investor as to future investment & profit of the firm.

M-M had tried to prove their theory by different models. Some of them are explained as below:

Market value of share

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

$$P_0 = \frac{D1 + P1}{1 + ke} \quad \text{.....(I)}$$

Where,

P_0 = Market price at beginning (zero period)

D1 = Dividend per share to be received at the end of the period

P1 = Market price of the share at the end of the period

ke = Cost of equity assumed constant

No external financing

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

$$nP_0 = \frac{n D_1 + P_1}{1 + ke} \text{ ---------- (ii)}$$

Where,

n = Number of equity shares at zero period

New shares

Assuming that the retain earnings is not sufficient to finance the investment needs of the funds, in that case insuring new shares is the other alternative. Say (Dn) is the number of newly issued equity shares at the price of (P1)

$$nP_0 = \frac{nD_1 + (n=Dn)\, P_1 - Dn\, P_1}{(1+ke)} \text{ ----------iii}$$

Where,

Δn = No. of equity shares at the end of the years.

n = No. of shares at the beginning

Total numbers of shares

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

$\Delta np_1 = I - (E-nD_1)$

or $\Delta np_1 = I - E + nD_1$ ----------iv

Where,

Δnp1 = The amount obtained from the sale of new share to finance capital budget

I = Total new investment required

E = Earning of the firm during the period.

$(E-nD_1)$ = Retained earning

Conclusion

By substituting the value of nP_1 from equation (iv) to the equation iii we find,

$$nP_0 = \frac{nD_1 + (n+\Delta n) P_1 - (I-E+nD_1)}{(1 + ke)}$$

$$\text{or } rP_0 = \frac{nD_1 + (n+\Delta n) P_1 - I+E-nD_1}{(1+ke)}$$

$$\text{or } nP_0 = \frac{(n+\Delta n) P1 - I+E}{(1+ke)} \text{ ----------v}$$

In such a way, M-M approach concludes its result, that there is no any role of dividend (D_1) in the above equation. So M-M concludes that dividend policy is irrelevant & dividend policy has no effect on the share price.

3. Gordon's study

Myron Gordon (1962) in his study concluded that directed poling of the firm affects its value. In this model, he explained that investors are not indifferent between current dividends and retention of earnings. The conclusion of this studies that investor's value (i.e. give priority) the present dividend more the future capital gain. His argument insisted that an increase in dividend pay out ratio leads to increase in the stock prices for the reason that investors consider the dividend field (D_1/P_0) is less risky than expected capital gain.

Hence, investor's required rate of return increases as the amount of dividend decrease. This means there exists a positive relationship between the amount of dividend and the stock prices.

Gordon's model is based on the assumptions that the firm is an all equity firm.

No external financing is available. Internal rate of return (r) appropriate discount rate (k) one constant. The firm and its stream of earning are perpetual.

The corporate tax do not exist. The retention ratio (b) one decided upon is constant. Thus growth of dividend (d) = b.r is constant forever. The discount rate is greater than growth rate (g) (i.e. k>br=g)

Based on the above assumption, Gordon provided the following formula (which is a simplified version of original formula) to determine the market value of a share.

$$P = \frac{E (1-b)}{k-b.r}$$

Where,

P = Price of share

E = Earning per share

b = Retention ratio

1-b = Dividend pay out ratio

E (1-b) = Dividend per share

K = Capitalization rate or cost of capital

b.r = Growth rate in r i.e., rate of return on investment of on all equity firm.

According to his model, the following facts are revealed.

(i) r > k (Growth firm)

In case of growth firm, share price tends to decline in correspondence with increase in pay out ratio or decrease in retention ratio, i.e. high dividend corresponding to earnings leads to decrease in share prices. Therefore dividend and stock prices are negatively correlated in growth firm.

(ii) r = k (Normal firm)

By regarding the normal firm, share value remains constant regardless of changes in dividend policies. It suggested that stock prices & dividends are free from each other in normal firm.

(iii) r < k (Declining Firm)

In case of declining firm, share price tend to raise in correspondence with rise in dividend pay out ratio. When dividend distribution ratio or dividend pay out ratio increased, the price of share tend to be increased. It means dividend and stock prices are positively correlated with each other in a decline firm.

In conclusion

* Investors give more value to the current dividend rather than future capital gain.
* Investors want current dividend because they do not like to bear future uncertainty rather than enjoying the current earnings.
* Thus payment of more dividends increases the market value of the share (i.e. investor & final more dividend field)

4. Watt's study

Ross Watt's study of an annual dividend model is somehow disagreed by Michael Laub. He disagrees with Watt's specification of an annual dividend model instead of quarterly dividend model, and with his conclusion that information content of dividend is trivial.

Laub, placed his views by "Reinterpretation of Watt's study" and give some empirical evidences for his argument. But Watt denied Laub's view and said neither Laub's evidence nor "Reinterpretation" indicates the superiority of a quarterly dividend model or the non-triviality of the information content in dividend. It means the specification of the dividend-earning relationship is important and result of any dividend information content study depends crucially an the approach used.

Watt's interpretation

Ross Watt in his study had interpreted quarterly versus annual dividend model and adds that The accountants tend to base their accounting procedure for the calculation of earning on 1 year period. The quarterly earnings often include in their calculations simple extrapolation of many of the preceding years expenses. As a consequence, an expectation of future annual earnings based on quarterly earning may I will be less efficient than such an expectation base on annual earnings which that extrapolation is absent.

Therefore, in this case management may prefer to wait for the determination of annual earnings before changing regular dividends.

In regard to quarterly earnings, he further erase a problem. The problem is that: There may be a seasonal component in those earnings and in order to interpret any change in quarterly earnings, an estimate must be made of seasonal component. It may encourage management to wait for annual earnings to determine whether to change dividends.

Watt points out, two third of the regular dividend changes and nine tenth of the extra dividend declarations occur in the first and last quarter which give the evidence of management for annual dividend rather than quarterly model of Laub. Therefore according to Watt if Laub's dispute were valid, it would not affect the stock price test. Watt said in conclusion nothing would cause Watt to change the conclusion of his paper.

5. Van Horne and Mc Donald's study

Van Horne and Mc Donald conducted a more comprehensive study on dividend policy and new equity financing. The purpose of this study was to investigate the combined effect of dividend policy and new equity financing decision on the market value of the firm's common stocks. They are using a will-known valuation model, i.e cross section regression model during the year end 1968 performed the empirical test. The required data were collected from 86 electricity firms included on the COMPUSTAT utility data tape and firms in the electronics and electronic component industries as listed on the COMPUSTAT industrial data tape. They tested two regression models for the utilities industries.

First Model

$$P_0/E_0 = \propto_0 + d_1\,(g) + \propto_2 (D_0/E_0) + \propto 3(Lev) + u$$

Where,

P_0/E_0 = Closing Market price in 1968 divided by average EPS for 1967 & 1968

G = Expected growth rate measured by the compound annual rate of growth in assets per share for 1960 trough 1968.

D_0/E_0 = Dividend pay out, measured by cash dividend in 1968 divided by earning in 1968.

Lev = Financial risk, measured by interest charged divided by difference of operating revenue & operating expenses.

u = Error term

$\propto$ = alpha

Second Model

$$P_0\ lE_0\quad \propto_0 = \propto_1 (g_1) + \propto_2 (D_0/E_0) + \propto_3(Lev) + \propto_4(Ia) + \propto_5(Fb) + \propto_6(Fc) + \propto_7(Fd) + 4$$

Where,

Fa, Fb, Fc & Fd are dummy variables corresponding to "New issue ratio (NIR) group A through D.

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

Again they tested the following regression equation for electronic & electronic components industry.

$P_0\ lE_0\ \propto_0 = \propto_1(g_1) + \propto_2(D_0/E_0) + \propto_3(Lev) + \propto_4(OR) + 4$

Lev = Financial risk measured by long-tern debt plus preferred stock divided by net worth as of the end of 1968.

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

By using these models or methodology, they compared the result obtained for the firms in an industry sample. They concluded that for electric utility firm in 1968. Share value was not adversely affected by new equity financing in the presence of cash dividends; except for those in the highest new issue group and it mode new equity a more costly form of financing then the retention of earnings. They also indicated that the payment of dividends through excessive equity financing reduces share prices. For electronic components industry, significance's relationship between new equity financing and value was not demonstrated.

6. Deepak Chawla & G. Srinivasan's study(1974):

Chaula and srinivasan studied the impact of dividend and retention on share price. They took 18 chemicals and 13 sugar companies & estimated cross-rational relationship for the year 1969 and 1973. The required data were collected from the official directory of Bombay stock exchange. They use two stage least square techniques for estimation. The objectives their study was as follows.

- To estimate a model to explain share prices, dividend and retained earning relationship.
- To test the dividend, retained earnings hypothesis.
- To examine the structural changes in the estimated relations over time.

To explain above-mentioned objectives, they used simultaneous equation mode. As developed by friend and puckett (1964). They used two stage least square techniques for estimation. They also used earning price ratio instated of lagged price earning ratio, i.e. P/E ratio (P/E) t-1. The model in its unspecified from was as follows.

(i) Price equation

$Pt = F [Dt, Rt (P/E)^1 t-1]$

(2) Dividend supply function

$Dt = g[Eb\ Dt-1\ (P/E)^1\ t-1]$

(3) Identity

$Et = Dt + Rt$

P = Market price per share

D = Dividend per share

R = Retained earning per share

E = Earning per share

(P/E)t = Deviation from the sample average of price earning ration

t = Subscript for time

As per the financial theories they expected the coefficients of the dividend and retained earnings to be positive in the price equation. Similarly the dividend supply function also they expected a positive sign for current earnings and previous dividend.

From the result of their two stage least square estimation, they found that in case of chemical industry the estimated coefficient has the correct sign and the coefficient of determinative of all the equations were very high. It implies that the stock price and the dividend supply variation can be explained by their independent variables. But in case of sugar industry they found that the sign for the retained earnings is negative in both years. So they left sugar industry for farther analysis. For chemical industry, they observed that the coefficient of dividend was very high as compared to retained earnings. They also found that coefficient of dividend was significant at one percent level in both years where as coefficient of retained earnings was significant at ten percent level in 1969 and at one percent level in 1973.

Financially, they concluded that the dividend hypothesis holds good in the chemical industry. Both dividend & retained earnings significantly explain the variations in share price in chemical industry. They also stressed 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.

Upinder S. Dhillon and Herb Johnson's Study:

Upinder S. Dhillon and Herb Johnson Studied of the effect of dividend changes on stock and bond prices. For this study, they took various dividend changes samples for the extreme cases - dividend initiations and dividend omissions most of the samples were identified from COMPUSTANT and CRSP Master on the study period, Moreover the samples were limited to firms with stock and bond traded on the New York stock exchange (NYSE) or American stock exchange (AMEX). They used the mean adjusted return methodology as developed in masulis (1978, 1980a, 1980b) and applied in Dann (1980, 1981), The objective of this study was to examine stock and bond price reactions to dividend changes.

The researcher reviews their study and finding of their study are taken as review. Bond prices decline when dividend are increased. More over the wealth redistribution effect is statistically significant for the combined samples in the same way bond prices increase when divined decrease. Dividend decreased are likely to be announced at the same time as bad news about the firm. In facts, in their study few samples provide evidence that dividend reductions are closely associated with losses.

In their study, stock return is increased when dividends increases where as bond return is decreased when dividends increase and vice versa this indicates that market price of bond has negative impact of dividend incensement, where as market price of share has positive impact of dividend increasement it means the positive stock market response to dividend increase.

Doron Nissim and Amir Ziv's Study(2001):

Doron Nimssim and Amir Ziv published the journal named as dividend changes and future profitability on December in 2001. They investigate the relation between dividend changes and future profitability, measured in terms of either future earnings or future earnings. In this study, for purpose of research data were collected by searching the CRSP monthly event file for dividend events. They allocated each observation to a particular year if the current dividend was declared in the second, third or fourth fiscal quarter of that year or in the first quarter of the following fiscal year. The resulting sample was matched with the COMPUSTAT annual files and was listed either on NYSE or AMEX. They took the sample of 100,666 observations. The main objective of this study is that either the dividends are positively related to earnings changes in each of the two year after the dividend changes or not.

The researcher reviews their study and following finding are obtained that the dividend changes are informative about future earnings. To affect price, the earning information that dividend changes convey must be about future abnormal earnings rather than future normal earning. Earnings follow a random walk, so the change in earnings measures unexpected profitability. In their analysis they find that dividend increases or decreases indicates that current year earnings will be higher or lower than the previous years earnings. For subsequent years, however they find no significant relationship between dividend changes and earning changes. If one consider only earnings information, the expected change in earnings may be zero or constant. However, in the presence of additional information, this property may not hold. Because some of the samples in his study show that an important predictor of earnings changes is the ratio of earnings to the book value of equity.

2.3 (a) Review of Major National Studies

There are some few studies in Nepal which have looked into corporate dividend behavior. some studies are made which are going to be reviewed here.

(1) Radhe S. Pradhan's Study (1993)

Dr. Rade Shyam Pradhan studies the stock market behavior in Nepal in 1992. In his studies, for the purpose of research data were collected from 17 sample enterprises covering the years between 1986 to 1990. In his studied he put the following objectives.

* To examine the stock market behavior in Nepal
* To find out the relationship of market value to book value, price earnings and dividend with liquidity, profitability, leverage, assets turnover, and interest coverage.

The writer review his study and findings of his study are taken as review that the higher the earnings on stock, higher the ratio of dividends per share to market price per share. Dividends per share market price per share as well as interest coverage were positively correlated. There was positive relationship between dividend pay out and liquidity as well as profitability. Positive relationship dividend pay out & turnover ratios. The stock paying lower dividend, liquidity and leverage are more variable.

The stock paying higher dividends, earnings, assets turnover and interest coverage are more variable.

(2) Manandhar's Study (2000):

The main statement of the problem the study is to test whether Nepalese corporate firms consider the legged earning and dividend paid to pay the dividend in current year. To test this problem he has consider 17 corporate companies as samples and set different hypothesis and drawn conclusions that there is positive relationship between change in dividend policy in terms of DPS and change in lagged earning. In overall there is a positive relationship between changes in lagged consecutive earnings & DPS. There is relationship between distributed lagged profit & dividend. When change in lagged consecutive earning is greater than zero, in 65% case, change in DPS overall increase in EPS has resulted to the increase in dividend payment in 66.66% of the cases while decrease in EPS results decrease in dividend payment. Most of the Nepalese corporate firm as taken for study found that they have followed the practice of maintaining constant dividend per share In overall Nepalese corporate firm are reluctant to decrease dividend either keeping dividend payment constant or higher to take the advantage of information constants and signaling effects of dividend relation to the firm continued progress and performance, sound financial strength favorable investment environment, lower risk, ability to maintain dividend rate and finally to the stock in the stock market.

(b) Review of thesis

(a) R.R. Gautam's study(2008)

Mr. Rishi Raj Gautam conducted a comparative study of dividend policy of commercial banks by using the secondary data of the banks in 2008.

Objectives of the study are as follows (Gautam, R.R. 2008)

* 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 there is any uniformity among DPS, EPS and DPR of the three sample commercial banks.

Major findings of his study are that Average earnings per share and dividend per share of all concerned are satisfactory. His analysis indicates the largest fluctuations in EPS and DPS. No selected sample exhibit constant dividend pay out ratio. Shares of the financial institution are actively traded and market prices are increasing. Correlation between DPS and EPS of all sample is fairly positive. But it is fairly safe to say that the relationship is not significant.

(b) Narayan Timilsina's Study(2008)

An MBS thesis entitled "Dividend policy and its imipact on market price of stock" was prepared by Mr. Manoj Bhattarai with the data taken from two commercial banks and two insurance companies in 2008. He analyzes the data of five years from 2003 to 2008 using simple & multiple regression equations.

Major finding of his study are as follows:

* There is not any consistency in dividend policy in the sample firms. It has indicated the need of dividend strategy, as well as the need of proper analysis of the respective sector of the firms.
* In the study he find that the MPS of selected sample firm is affected by the financial position and the dividend paid by the firms, in this regards the MPS of the sample firms is seem to be fluctuated. It denotes that Nepalese investors are not treated fairly.
* The lack of financial knowledge and market inefficiency has affected the MPS in all selected sample firms.

(c) **Basanta Shrestha's (2008)**

An MBA thesis contained "Dividend and stock prices: An empirical study" Prepared by Mr. shrestha was carried out by using the secondary data of sixteen enterprises of the period of 2003 to 2008.

Mainly he tried to highlight the relationship between stock price and other independent variables by setting the simple linear regression equations. The sectors chosen for his study were manufacturing & Training and Banking & Insurance's.

Major findings of his study were as follows:

* The relationship between dividend per share and stock price is positive.
* Focally dividend affects the share price in different sectors.

* Changing dividend policy of dividend per share might help to increase the market price of stock.
* The relationship between stock prices and retained earning per share is not prominent.
* The relationship between stock prices and lagged earnings price ratio.

The dividends are positively related to earnings changes in each of the two year after the dividend changes or not.

d) Bishnu pd Adhikari's study(2008)

An MBS thesis entitled "Dividend Policy and its Impact on Stock price of selected Manufacturing enterprises and Trading Companies of Nepal" prepared by Mr.Adhikari was carried by using secondary data from 2004-2008

Mainly he tried to highlight the relationship between dividend payout ratio and stock price of nepalese manufacturing and trading enterprise

Major findings of his study were as follows

*To examine the practice made by the Nep'se firms in regards to the dividend policy.

* To find the impact of dividend policy on market price of stock.

* To evaluate the dividend policy of manufacturing enterprise and trading companies.

* To examine the relationship between dividend payout ratio and stock price of nepalese manufacturing and trading enterprise.

e**) Tank Pd Subedi's study:(2009)**

An MBS thesis entitled "Current position of Nepal stock exchange in Nepalese capital market" prepared by Mr.Subedi was carried by using secondary data from 2004-2008

Major findings of his study were as follows:

- To study the roles of Nepse and Sebo in Nepalese capital market.
- To examine the number of listed companies and annual turnover of Nepse.
- To analyze the trend of market capitalization of Nepse index.
- To examine the quantity and number of total traded share.

f) Yadav Khatri (2009):

Khatri carried out "Stock price movement of commercial bank "prepared by using secondary data

Major findings of his study were as follows:

- To study the trend of stock price movements with various financial indicators of sampled commercial banks in the market.
- To examine and evaluate the relationship of MPS with various financial indicators like EPS and DPS.
- To evaluate return and risk proportion of investment on stock of sampled commercial bank.
- To identify if the stock of the sampled bank are overpriced, underpriced or equilibrium priced.

  His research will be helpful to the Nepalese government for making policies it gives emphasis to invest in new concept in today's age

Research Gap:

There have been several researchers done before in the topic stock market and stock market prices. All of those researchers have much useful finding their limitations after reviewing some thesis and other related sources. It is found that various studies were done on the topic of share price and its determiner some of the studies were based on financial performance some on dividend policy some on share price behavior. Similarly few Nepalese writers have written article directly based on share price movement. Therefore there is a gap of time period which is fulfilled by this study.

CHAPTER - III

RESEARCH METHODOLOGY

Research methodology is a way for systematically solving the research problem. It indicates the method and process employed in the entire aspects of the study Research methodology refers to the various sequential steps (alng with a rationale of each such step) to be adopted by a researcher in studying a problem with certain object/objects in view (kothari, 1994:19). With out methodology of any proper research no proper meaning can be obtained, because proper guidelines can not be obtained to get required result of research.

3.1 Research design

A plan of study or blue print for study that presents a series of guidelines to achieve the researcher to progress in the right direction in order to fulfill the objective is called a research design or strategy. Research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance variables to the research purpose with economy in procedure the research design the conceptual structure within which research is conducted. This study deals with a dividend policy of insurance companies and its impact on stock price and covers five years period 2005 to 2009. The research design refers to entire process of planning and carrying out a research study. To conduct the study, descriptive cum analytical research approach is adopted. Descriptive approaches are utilizes for conceptualization, problem identification, conclusion and suggestion for the research where as analytical approach is followed parametric and non-parametric test of data.

3.2 Sources of data

The study is mainly depending upon the secondary data of the selected companies. Whose source include the annual reports of the corresponding companies under study, the stock price for the whole year listed in Nepal stock exchange (NEPSE), Financial Reports Published by NEPSE and Securities exchange Board and other relevant data regarding the dividend policy & practices of insurance companies. Besides this, the data are collected from various newspapers, magazine booklets and

journals published by the concerned governmental and non-governmental organizations.

3.3. Population and sample

There are 17 insurance companies that have shares trading actively in stock market. Hence it does not seem reasonable to study all the companies regarding the study topic. Because of the limited time and resource factors too, it is not possible to study all of them. So sampling will be alone. There should be no confusion with parameters and size of the companies since the topic is not related to comparison of sizes, but the dividend policy & its impact on market price of share or simple the valuation of shares.

3.4 Period of Study & No. of Observation

The study is based on five years. Financial data of five insurance companies. Data are taken from fiscal year 2060/061 to 2064/065 under study. Thus number of observations of this study is 25 (5x5). Generally it will take the time of six month to complete the study.

NUMBER OF OBSERVATION SELECTED FOR THE STUDY

S.N	NAME OF INSURANCE COMPANIES	YEAR	OBSERVATION
1	United Insurance Co. Nepal Ltd	2005-2009	5
2	Nepal Insurance Co. Ltd	2005-2009	5
3	Himalayan General Insurance Co. Ltd	2005-2009	5
4	Everest Insurance Co. Ltd	2005-2009	5
5	Alliance Insurance Co. Ltd	2005-2009	5
	Total Observation		

For the selection of sample firms from the total population random sampling techniques have been adopted.

Total Population(N) = 17

Sample Size(n) = 05

Sampling weightage = 5/17 * 100

= 29.41%

Total Observation Period = 5 years and 25 variables

3.5 Tools and techniques

Data collected from various sources have been properly organized, analyzed and presented in appropriate table and suitable formats. Different types of tables and formats are subjected to interpretation and explanation as necessary. Few specific financial tools as well as statistical tools are used to analyzed variables. Mainly this analysis has been done using following tools and methods:

1. Financial tools

Financial tools are those, which help to study the financial position of the firms. The financial tools used in this study are as follows:

(i) Earning per share (EPS)

Earning per share can be defined as the rupee amount earned per share of common stock outstanding it measures the profitableness of the common shareholders investment. It shows the profitability of the companies on a per share basis. Earning per share can be computed by dividing net profit after taxes by the total number of common stock outstanding.

Thus,

* Earning per share (EPS)

$$= \frac{\text{Earning available to common shareholders}}{\text{No. of common share outstanding}}$$

The higher the earning indicates the better achievement in terms of profitability of the companies by mobilizing their funds and vice versa.

(ii) Dividend per share (DPS)

Dividend per share indicates the rupee earnings distributed to common stockholders per share held by them. It is distributed from net profit after tax. Remaining amount after distribution of dividend to common shareholder is known as retained earnings. Dividend per share measures the dividend distribution to each equity shareholders. Generally, higher DPS create the positive signal as well as attitude to the shareholders towards the company's common stock, which

consequently helps to increase the market value of share. It also works as the indicators of better performance of the company management. It is calculated by dividing the total dividend distributed to equity shareholders by the total number of equity share outstanding. Thus,

* Dividend per share (DPS)

  = Total amount of dividend paid to ordinary shareholders / No. of ordinary share outstanding

(iii) Dividend pay out ratio (DPR)

It is the actual paid proportion of earning in the form of dividend to common equity shareholder. This ratio show what percentage of profit is distributed as dividend and what percentage of earning is retained as the form of reserve & surplus for the growth & development of the companies. Again DPR mainly depend upon earning of the company. Higher the earning of the company higher it is capable to distribute the dividend and vice versa.

There is an inverse relationship between dividends and retained earnings. The higher the dividend pay out ration, the lower will be the proportion of retained earning and vice versa. But the capacity of internal financing of the company is checked by the retention ration.

Dividend pay out ration is calculated by dividing the dividend per share (or total dividend) by earning per share (or total earning).

* Dividend pay out ration

  $$DPR = \frac{\text{Total dividend}}{\text{Total net profit}}$$

(iv) Dividend yield (Dy)

Divided yield is a percentage of dividends per share on market price per share. It measures the dividend in relation to market value of share. So, dividend yield is the dividend received by the investors as a percentage of market prices per share in the stock market.

This ratio highly influences the market price per share because a small change in dividend per share can bring effective change in the market value of the share. The share with higher dividend yields is worth buying. This ration can be calculated as below:

* Dividend yield

= Dividend per share / Market price per share.

(v) Market price per share (MPS)

Market price per share is the value of common stock. It can be obtained by a firm from the sale of share in the capital market. MPS is one of the variable, which is affected by DPS of the firm. If earning per share and dividend per share are high of the concerned companies, the market value of those company's share will also be high. Mainly the capital market determines MPS. In this study the market price per share means the rupee value of one share indicated in NEPSE index.

Theoretically, calculated market value of share can be derived by using the following formulas:

* Current market price (P_0)

= $D_1/(Ks-g)$

= $D_0 (1+g)/ (Ks-g)$

Where,

P_0 = Current market price per share

D_0 = Current dividend per share

D_1 = Expected dividend per share at the end of year one.

g = Dividend growth rate.

ks = Investors' required rate of return..

= Risk free rate of return + Inflation rate + market risk premium

2. Statistical tools

Besides the financial tools various statistical tools have been used to operate this study. The result of analysis has been properly tabulated, compared, analyzed, and interpreted. In this study the following statistical tools are used to analyze the relation between dividend and other variables.

(i) Arithmetic mean

Arithmetic mean of a given set of observation is their sum divided by the number of observation. In general X_1, X_2, …….. X_n are given 'n' observation, than their arithmetic mean, usually denoted by X is given by:

$$\bar{X} = \frac{(x_1 + x_2 \ldots\ldots\ldots + xn)}{n}$$

$$= \sum x/n$$

Where,

$\bar{X}$ devotes means, X_1, X_2 and X_n are given set of observation and 'n' devotes no. 07 items observed.

(ii) 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 is also known as root mean square deviation as well as scatter ness for the reason that is the square root means of the equated deviation from the arithmetic mean. It is deviated by the small Greek letter sigma (6). Karl person introduced the standard deviation concept in 1823. It is by for most important and wildly used measure of studying dispersion.

In this study, standard deviation is calculated for selected dependent and independent variables specified in the model presented as below;

Standard deviation

$$(\sigma_x) = \sqrt{\sum x^2 /n - (\sum x/n)^2}$$

(iii) Coefficient of variation (C.V)

The coefficient of variation reflects the relationship between standard deviation and mean. It is the relative measure of dispersion, comparable across, which is defined as ratio of standard deviation to the mean expressed in present (Levin, Richard and Rubin 1994: P. 144). The series with higher coefficient of variation is said to be more variable, less consistent, less uniform, less table, and less homogenous. It is denoted by C.V. and is obtained by dividing the standard deviation by arithmetic mean. Thus in symbol, coefficient of variation

$$(C.V.) = \frac{S.D.}{Mean} \times 100$$

$$= \frac{\sigma}{\bar{X}} \times 100$$

Where,

S.D. or σ = Standard deviation (sigma)

$\bar{X}$ = mean

(iv) Coefficient of correlation (r)

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

The value of coefficient of correlation always between ±1. A value of -1 indicates a perfect negative relationship between two variables; and the value of +1 indicates a perfect positive relation. A value of zero indicates that there is no relation between two variables. Closer the r is to +1 or -1 the closer the relationship between the variable and closer the value of r with zero (0) the less close relationship. The algebraic sign of correlation coefficient indicates the direction of the relationship between two variables, whether direct or inverse, while the numerical value of the coefficient is concerned with the strength of the relationship between two variables.

In this study, the degree of relationship between market price and other relevant financial indicator such DPS, EPS, DIP ratio etc. are measured by the correlation coefficient.

This can be calculated as below:

$$r = \frac{COV(x, y)}{\sigma x, \sigma y}$$

$$\text{or, } r = \frac{\Sigma(x-\bar{x})(y-\bar{y})}{(n-1)\,\sigma x\,\sigma y}$$

$$r = \frac{n\sum xy - \sum x.\sum y}{n\sum x^2-(\sum x)^2 \times n\sum y^2-(\sum y)^2}$$

(v) Coefficient of determination (R^2):

The coefficient of determination is the primary way to measure the extent that exists between two variables, x an y. If refer to a measure of total variance in a dependent variable that is explained by its linear relationship to an independent variables. The coefficient of determination is denoted by R^2 and the value lies between zero and unity Closer the R^2 to unity grater the explanatory power. A value that is one can be occurred only if the unexplained variation is zero. Which is simply means that all the data points in the scatter diagram fall exactly on the regression line. The (R)2 is always a positive number. Again it is defined as the ration of explained variance to total variance thus,

Coefficient of determination

= Explained variance / Total variance

= 1 - unexplained variance / Total variance

(vi) Regression analysis

The regression refer to an analysis or a statistical method for determining relationships between the variables by the establishment of an approximate functional relationship between them. It is a statistical device used to estimate or predict the variable or interest from the known values of other variable. In other words of Johnson and Siskin, "The technique of regression analysis is used to determine the statistical relationship between two (or more) variables and to make prediction of one variable on the basis of the others, It is considered as a useful tool for determining the strength of relationship between two (simple regression) or more (multiple regression) variables. It is also used to predict the value of one variable from the given value of other variables.

In this study the following regression have been analyzed.

a. MPS on earning per share

$Y = a + bx$

Where,

y = MPS

a = Regression constant

b = Regression coefficient

x = Earning per share

This model has been conducted to examine the relationship between MPS (dependent variable) & EPS (Independent Variable)

b. MPS on DPS

$Y = a + bx$

Where,

Y = MPS

x = DPS

This model has been constructed to examine the relationship between MPS (dependent variable) and DPS (independent variable)

c. MPS on D/p ratio

$Y = a + bx$

Y = MPS

x = D/P ratio

d. MPS on dividend Yield (DY)

$Y = a + bx$

Where,

Y = MPS

x = DY

This model is constructed to examine the relationship between MPS and DY where as MPS is dependent variable & DY independent variable.

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

$y = na + by$

$x y = a x + b x2$

Where,

a = Regression constant

b = Regression coefficient

n = No. of observation in the sample

Regression constant (a)

The regression constant (a) which is the intercept of the model, represents the average level of dependent variable when independent variable has a value of zero. In other words, it indicates the mean or average effect on dependent variable if act variable omitted from the mode.

Regression coefficient (b)

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

(vii) Probable error P.E. (r)

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

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

1. If r< P.E (r) it is insignificant. So, perhaps there is no evidence of correlation.
2. If r> P.E (r), it is significant. The P.E. (r) of correlation coefficients may be used to determine the limits within the population correlation lies**.**

Limits for population correlation coefficient are (r) ± P.E. (r).

CHAPTER -IV

DATA PRESENTATION & ANALYSIS

In this chapter, the relevant and the available data information regarding dividend policy of the sample insurance companies have been presented and analyzed according to the research methodology as mentioned in the previous chapter. According to the use of various tools i.e. financial as well as statistical, the researcher analyses the data in reasonable manner.

4.1 Analysis of Financial Indicators

Earning per share (EPS), dividend per share (DPS), market price per share (MPS), Dividend pay out ration (DPR) and dividend yield (Dr) are some of the most important financial indicators of a firm. For this, detailed analysis of this indicators along with their mean, standard deviation and coefficient of variation is presented below with their mean, standard deviation and coefficient of variation is presented below with the help of the results obtained in appendix 1.

4.1.1 Earning per share (EPS)

Earning per share (EPS) is one of the most important financial indicators, which measures the earning capacity of firm. Mostly often, it is the basis of market influences for determining market value of share. In other hand it is the inherent factors as well as major determinants of the value of the firm. Actually, it measures the profitability of the shareholders investment on a per share basis. It is computed by dividing net profit after taxes by the total number of common stocks outstanding. Table number one as mentioned below shows the EPS of selected sample firms.

Table No. 1

Analysis of EPS

Year	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	61.56	42.89	18.62	26.62	8.06	31.55
2006	59.85	61.05	14.77	30.30	10.81	35.35
2007	43.48	65.20	14.80	25.50	14.81	32.76
2008	36.46	61.74	5.64	38.41	16.17	31.68
2009	0.00	57.22	11.68	39.86	4.00	22.55
Mean	40.26	57.62	13.10	32.14	10.77	30.77
S.D.	22.28	7.79	4.33	5.94	4.44	9.69
C.V	55.36	13.51	33	18.50	41.24	31.50

Sources: (Annual report of selected samples)

Above comparative table has shown the earning per share of five selected insurance companies with their pooled average as well as the standard deviation and coefficient of variation of the EPS covering the period from F.Y. 2005to 2009. In above table, Everest Insurance Company ltd. has the highest EPS through out the study period, where as Alliance Insurance Company Ltd (AICL) has the lowest EPS during the same the earning position of Himalayan Insurance Company Ltd. (HICL) is better than of United Insurance Company Ltd. (UICL). But Alliance has the least earning among the selected sample.

However UICL has higher EPS than AICL, but both of them are still below the average EPS of selected insurance companies through out the period. So we can say that earning capacity of UICL and AICL are not at the UICL and AICL are not at the satisfactory level. However Nepal insurance company's earning capacity is at the satisfactory level because EPS of this company is above the pooled average EPS. But in F.Y. 2009 Nepal Insurance has not completed its financial data, So the researcher can not find whether it has positive EPS or not.

Beside, considering the average EPS, it is preferable to state that rate of fluctuation with the help of C.V. the C.V. of EPS of EICL has lowest of all and NICL has highest of all. The C.V. of AICL and UICL is not satisfactory because they are higher on the basis of C.V. of all samples. However HICL is in at satisfactory level when considering the C.V. during the study period. It can be concluded that EPS of the UICL, AICL and NICL are most fluctuate, and EPS of EICL & HGICL have less

fluctuated earnings and EPS in comparison with others. We can show above data in diagram as well as graph in figure.

Figure No. 1

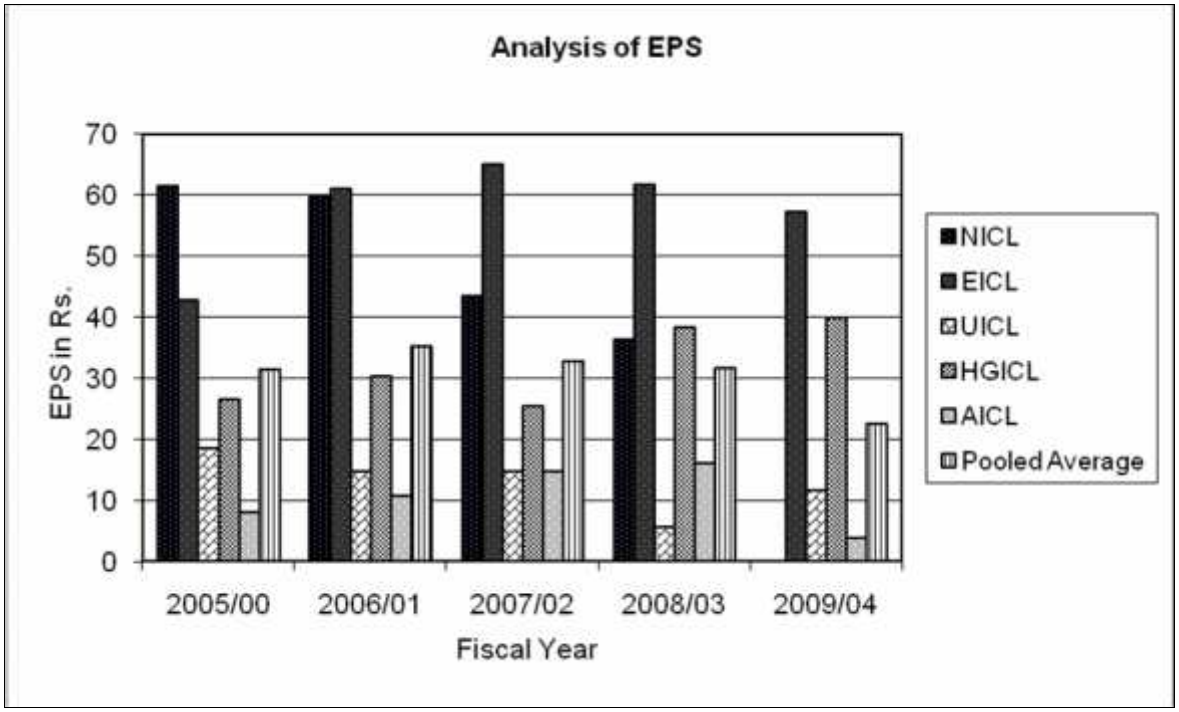
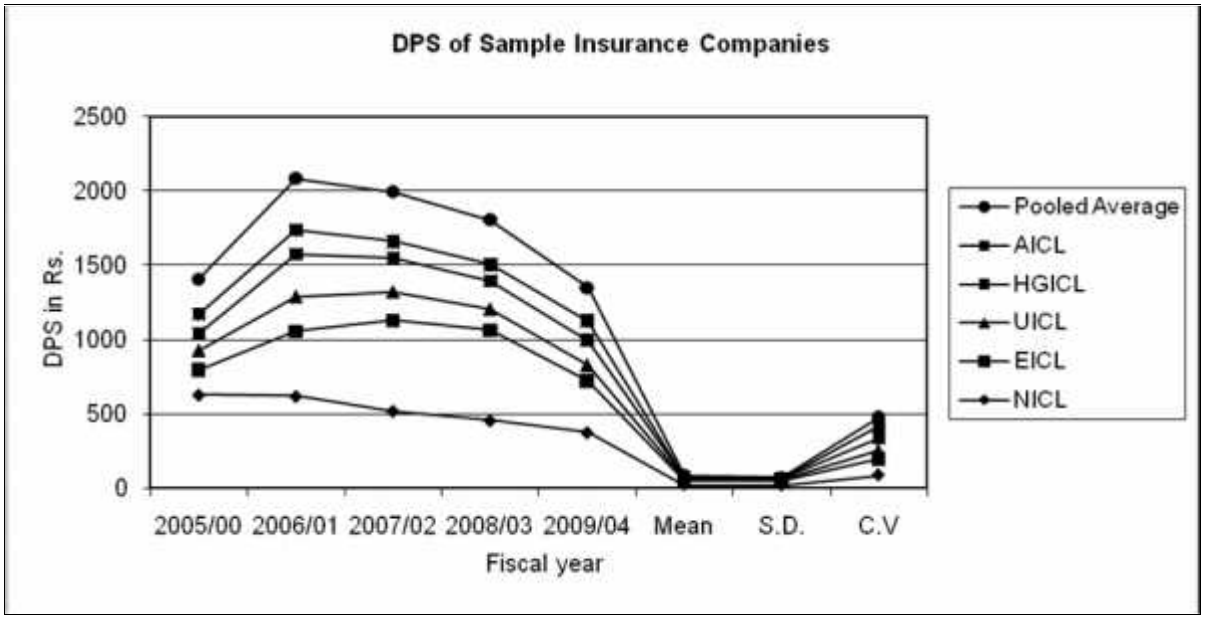


Figure No. 2



4.1.2 Analysis of DPS

Dividend per share (DPS) is an important financial indicator, which measures the dividend distributed to each equity share holders. In another words it is defined as the ratio of net profit after interest and tax and preference dividend paid to ordinary shareholder to number of common share outstanding

Table No. 2

Year	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	50.00	20.00	9.44	15.00	5.013	19.89
2006	50.00	20.00	7.54	15.00	5.013	19.51
2007	10.02	20.00	6.61	15.00	7.00	11.726
2008	10.00	100.00	3.77	0.00	0.00	22.75
2009	0.00	0.00	0.00	0.00	0.00	0.00
Mean	24.04	32	5.47	9	3.41	14.77
S.D.	21.54	34.87	3.29	7.35	2.87	8.24
C.V	89.74	108.97	60.16	81.16	84.28	55.81

Sources: (Annual report of different fiscal year)

In the year 2006, all the sampled insurance companies did not pay dividend for first three years Himalayan General Insurance paid the dividend as constant as well fixed DPS. In case of Everest Insurance Company, in year 2008, it paid Rs. 100 dividend per share. In this case Rs. 50 was paid on stock dividend. It is proved by the field study report during study period. In case of other related samples (i.e. NICL, UICL, and AIC), DPS is in decreasing trend. It is because, when researcher went to study their reason, he has found that they retained much more profit to meet the core capital criterion determined by the board of insurance.

Moreover, considering the average of DPS of insurance companies, it is preferable to state the rate of fluctuation in the dividend payment with the help of coefficient of variation (C.V.)

In average EICL has paid highest dividend, and then NICL has paid second highest dividend which is greater than average of average. Other insurance companies are lower than the average of average. The C.V. of DPS of UICL is the lowest of all, where as EVIC and NICL have the highest C.V.

From the data related to C.V. of table no. 2, it is concluded that all of insurance companies have largest fluctuation other hand dividend payment trend towards shareholder is not consistent.

We can show the above data by the help of bar diagram & graph as shown in figure no.

Analysis of DPS

Figure No. 3

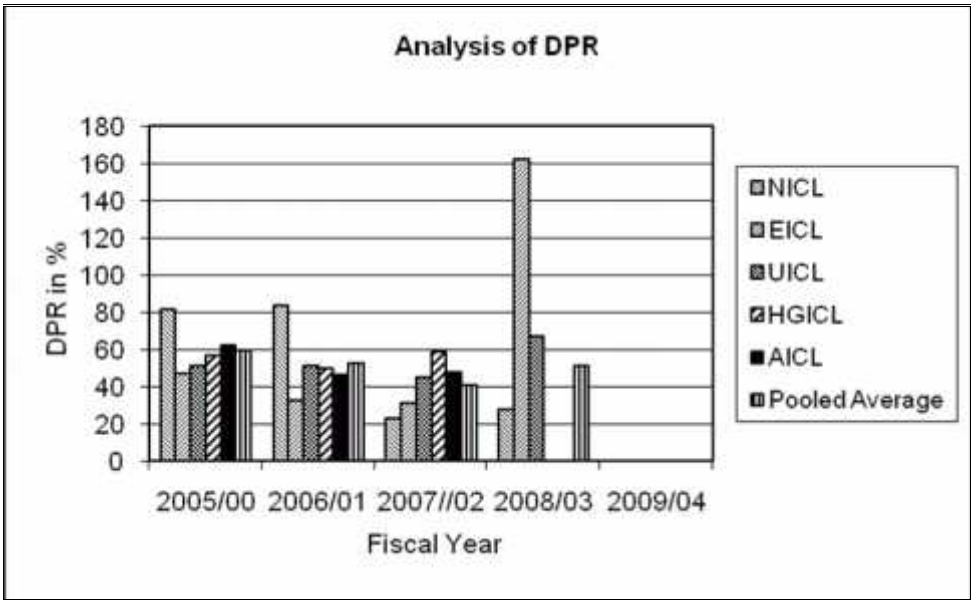
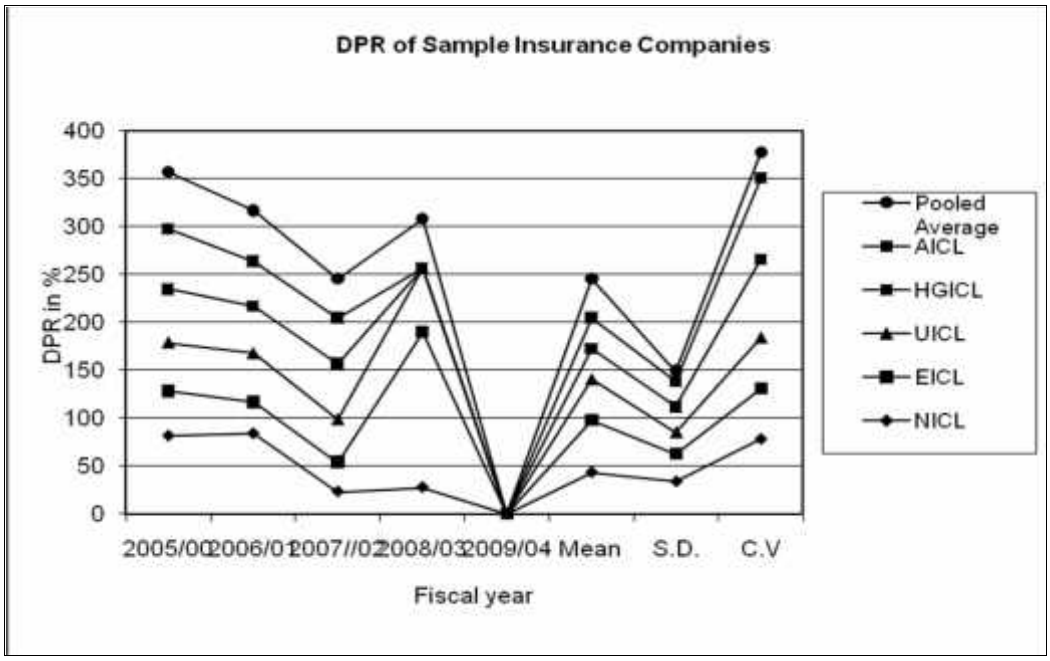


Figure No. 4



4.1.3 Dividend pay out ratio DPR

Dividend pay out ration (DPR) reflects the percentage of profit distributed as dividend and percentage retained as reserve for the growth of the company in micro sense RPR is only the proportion of earning paid in the form of dividend. It is calculated by dividing DPS by EPS. The following number 3, shows the DPR of sample insurance companies.

Table No. 3

Analysis of DPR

Year	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	81.22	46.63	50.68	56.35	62.199	59.42
2006	83.55	32.72	51.11	49.50	46.42	52.66
2007	23.05	30.67	44.61	58.82	47.26	40.88
2008	27.45	161.96	66.91	0.00	0.00	51.26
2009	0.00	0.00	0.00	0.00	0.00	0.00
Mean	43.05	54.40	42.66	32.93	31.17	40.844
S.D.	33.45	28.83	22.57	27.06	26.18	10.88
C.V	77.69	53	52.91	82.18	84.10	26.67

Sources: (Annual report of selected sample)

The data related to year 2008depicts that HGICL and AICL have not paid the dividend. Moreover, in year 2009 selected sample firms have paid the dividends.

In average, EICL has highest dividend pay out ration. NICL has second highest DPR. AICL has lowest DPR in average. NICL, EIC and UICL have higher DPR than average of average whereas HGICL and AICL have lower DPR than average of average DPR.

Considering the fluctuation in DPR with the help of coefficient of variation (C.V.) HGICL and AICL have highest C.V., which indicates largest fluctuation in DPR among the sample companies. NICL has nearly same fluctuation in DPR. UICL and EICL have lower fluctuation with comparison with other samples. But all of the sample firm are not in satisfactory level in case of fluctuation in DPR. Thus researcher find the C.V. of DPR of HGICL and UICL are least with comparison of others.

We can better represent the DPR of all sample companies with the help of bar diagram and graph as in figure no.

Figure No. 5

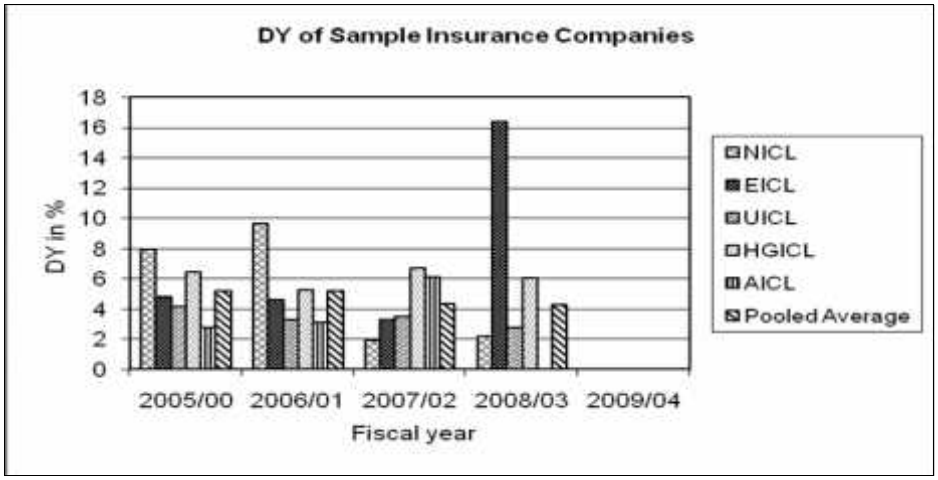
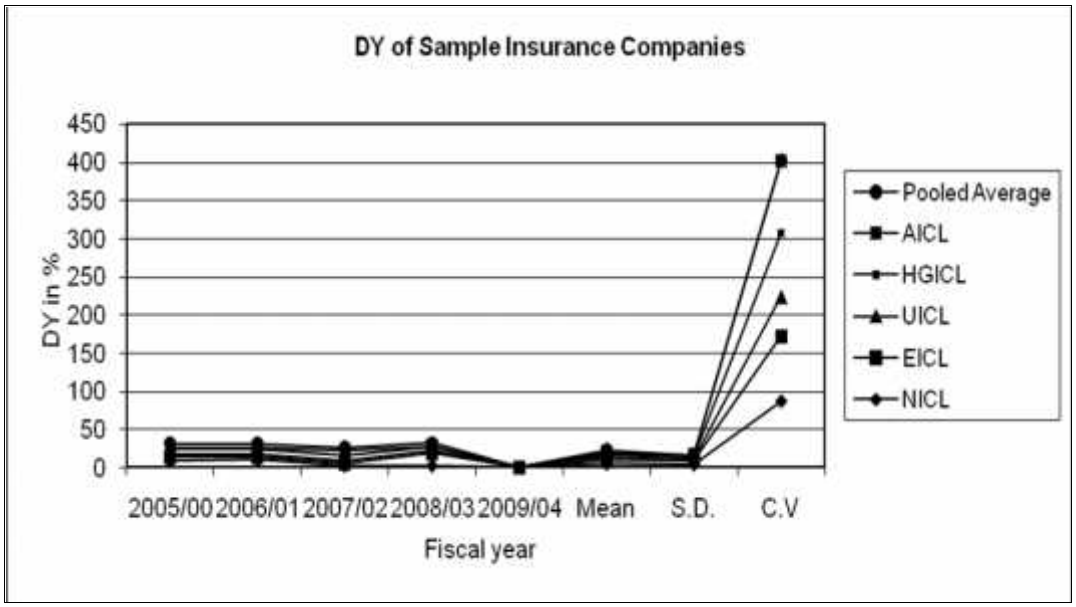


Figure No. 6



4.1.4 Market price per share (MPS)

MPS is that value of stock, which can be obtained by a firm from the sale of a share in the market. The capital market determines MPS. The following table shows the market price of the shares of the sample firms as indicated in NEPSE index.

Table No. 4

Analysis of MPS

Year	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	630	170	127	116	130	234.6
2006	620	440	228	285	162	347
2007	520	610	190	225	115	332
2008	456	610	138	190	110	300.80
2009	375	350	105	165	131	225.20
Mean	520	436	157.60	196.20	139.6	287.92
S.D.	97.18	166.56	44.92	44.93	27.16	49.75
C.V	18.68	38.20	28.50	22.90	19.45	17.27

Sources: (Annual report of selected sample firms)

By considering the above table, it shows the market price per share of the insurance companies with their pooled average MPS as well as the standard deviation & coefficient of variation of MPS of those insurance companies over the period from F.Y. 2005to 2009

Here average pooled MPS over the period is 287.92 where as the same of NICL alone is Rs. 520, which is almost two times greater than average pooled MPS. So NICL is the most appreciable insurance company among the selected ones. Everest Insurance Company Ltd. (EICL) can also be taken as in is over the pooled MPS. MPS of others (i.e. UICL, HGICL and AICL) are in decreasing trend as well as below the average pooled MPS during the study period. We can better present the comparative as well as individual MPS of the selected insurance companies with the help of bar diagram and graph in Figure.

Figure No. 7

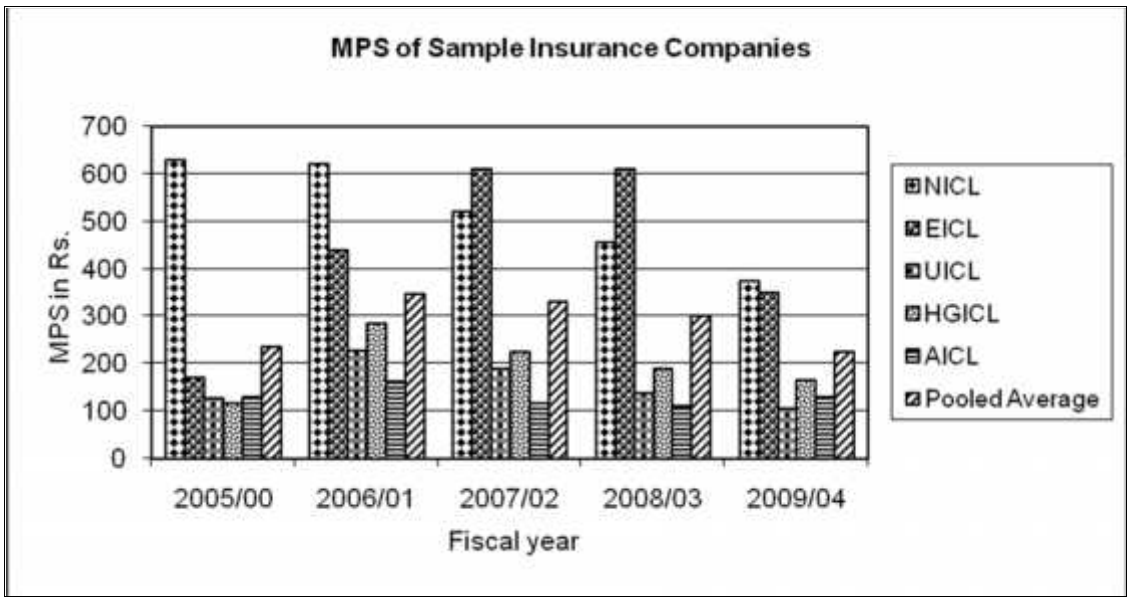
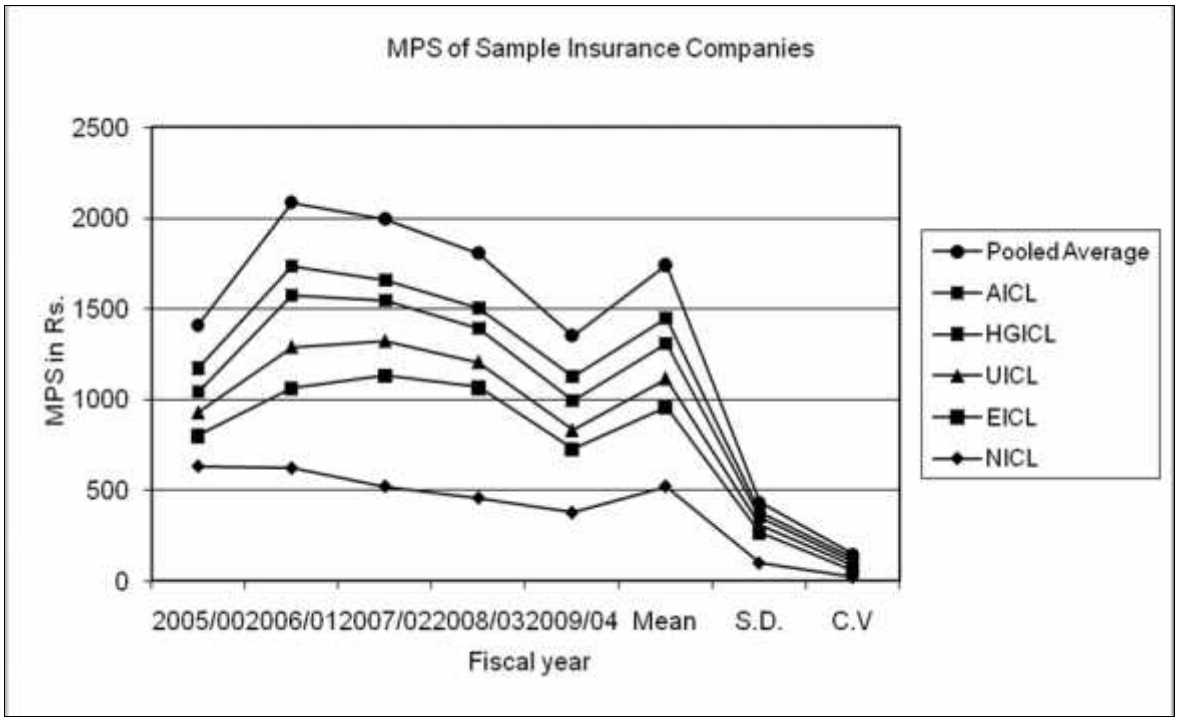


Figure No. 8



4.1.4 Dividend Yield (DY)

Dividend Yield measure the dividend in relation to market value of share. It is the dividend received by the investor as a percentage of market price per share in the

stock market. The following table no. 5 shows the dividend yield (DY) of the observed insurance companies.

Table No. 5

Analysis of DY

Year	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	7.94	4.76	4.10	6.41	2.78	5.198
2006	9.65	4.55	3.30	5.26	3.09	5.17
2007	1.93	3.28	3.47	6.67	6.09	4.288
2008	2.19	16.39	2.73	6.00	0.00	4.262
2009	0.00	0.00	0.00	0.00	0.00	0.00
Mean	4.34	5.80	2.72	3.67	2.39	3.78
S.D.	3.75	4.92	1.42	3.03	2.27	
C.V	86.47	84.86	52.48	82.63	94.95	

Sources: (Annual report of selected sample)

The above table no. 5 shows that the dividend yield of the insurance companies with their pooled average DY as well as standard deviation and coefficient of variation of DY over the period from F.Y. 2005to 2009.The dividend yield of NICL and EICL is 4.34 percent and 5.30 percent respectively. Which is grater than pooled average DY. At the same time the DY of HGICL, UICL and AICL is lower than the pooled average. Here, EICL is the most appreciable bank among the selected ones. In the same way, NICL also can be taken as in the satisfactory level as it kept itself above the pooled average during the observed period. Even it is in satisfactory level, it has been unexpectedly decreased in F.Y. 2007and there after. The DY of HGICL was above the pooled average in first three years, but it also has been unexpectedly decreased thereafter which might have given negative massage in the share market. DY of AICL and UICL are below the pooled average through out observed period except the F.Y. 2005/00 for UICL and 2007for AICL. HGICL and AICL, both of the insurance companies have gone down zero in F.Y. 2008and F.Y. 2009 In the same way non of the companies. We can better present the comparative DY of the companies with the help of bar diagram and graphs in figure.

Figure No. 9

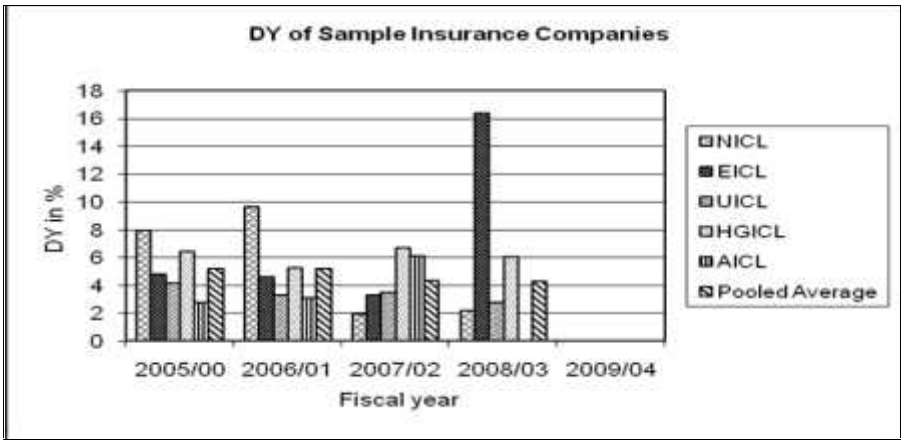
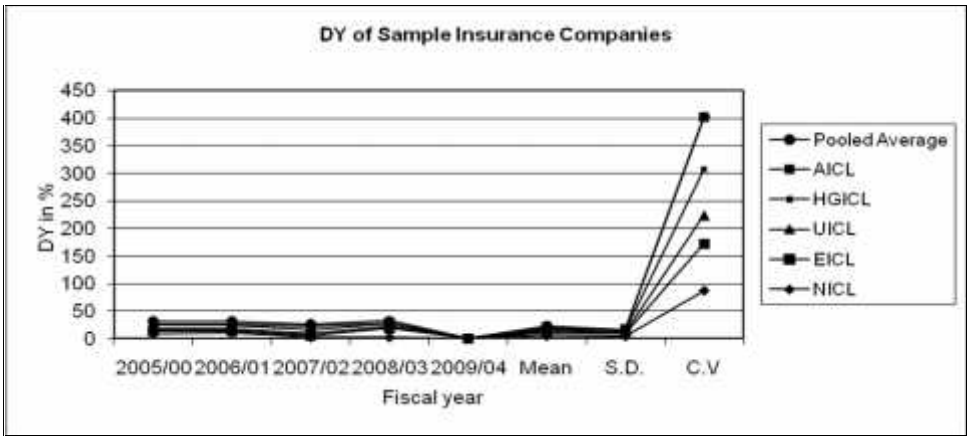


Figure No. 10



4.2 Analysis of statistical Indicators

4.2.1 Simple correlation and regression analysis

1. Simple correlation and regression analysis between DPS and MPS

Table No. 6

Simple correlation and Regression Analysis between DPS and MPS

Insurance Companies	Reg. Model	a	b	S.E. (e)	r	r^2	S.E. (r)	P.E. (r)	Significant/ Insignificant
NICL	y = a+bx	418.42	4.24	42.92	09398	0.883	0.052	0.035	Significant
EICL		353.68	2.57	181.37	0.54	0.29	0.32	0.2158	insignificant-
UICL		118.97	7.059	49.66	052	0.27	0.33	0.22	insignificant-
HGICL		177.50	2.078	70.69	0.27	0.027	0.41	0.276	Insignificant
AICL		127.84	3.45	32.69	0.37	0.13	0.39	0.26	insignificant
Pooled Average		265	1.64	58.803	0.28	0.08	0.41	0.27	insignificant

The table no. 7 has contained the different indicators (see appendix -2) helpful to analyze the simple correlation and regression between DPS and MPS of the observed five insurance companies along with their pooled average, where DPS is independent variable and MPS is dependent variable. With the help of these indicators, researcher can come to the following conclusions:

NICL

The regression constant or intercept coefficient (a) is 414.42, which shows that the average MPS would be Rs. 418.42 if the DPS were zero. The result shows that the slope of the regression line (b) is 4.24, which indicates that positive correlation exists between DPS and MPS of NICL, one rupee increase in DPS causes Rs. 4.24 increase in the market price of stock of NICL. The coefficient of determination (r^2) is 0.883, which indicates that only 88.3% of the variation of stock price is affected or determined by the explanatory variable DPS. The simple correlation coefficient (r) between DPS and MPS is 0.9398 which indicate that there is a high degree of positive correlation, or relationship between DPS and MPS of NICL. Since r is more than P.E. (r) and again more than 6 X P.E. (r) (=0.21), we can say with certainly the correlation is significant.

EICL

Here in case of EICL, the regression constant (a) is 353.68, which shows that the average MPS would be Rs. 353.77 if the DPS were zero. The result shows that the slope of regression line (b) is 2.57, which indicates that positive correlation exist between DPS and MPS of EICL. One rupee increase in DPS causes Rs. 2.57 increase in the market price of stock of the company (CICL). The coefficient of determination (r^2) is 0.29, which indicates that 29% of the variation of stock, price is affected or determined by the explanatory variable DPS. There is moderate level of positive correlation between DPS and MPS. But, since (r) is more than P.E. (r) and less than 6x P.E. (r) (=1.2948), we can with certainly the correlation is not insignificant.

UICL

By considering the above table no. 6 the researcher can find that the regression constant or intercept coefficient (a) is 118.97, which shows that the average MPS would be Rs 118.97 if the DPS were zero. The result shows that the slope of regression line (b) is 7.059, which indicates that positive correlation exists between DPS and MPS of UICL. One rupee increase in DPS causes Rs. 7.059 increase in the market price of share of ULCL. The coefficient of determination (r^2) is 0.27, which indicates that only 27% of the variation of stock price is affected by the explanatory variable DPS. The simple correlation coefficient (r) between DPS and MPS is 0.52, which indicates that there is a moderate relationship between DPS and MPS of UICL. Since the coefficient of correlation (r)is less than 6x P.E. (r) (=1.32), the correlation value is insignificant.

NGICL

Indicating or referring again above table no. 6, the regression constant or intercept coefficient (a) is 177.50, which shows that the average MPS would be Rs. 177.50 if the DPS of HGICL were zero again, slope of regression line (b) is 20.78, which indicate that positive correlation exists between DPS and MPS of HGICL. It means, one rupee increase in DPS causes Rs. 2.078 increase in market price of share of HGICL. The coefficient of determination (r^2) is 0.072, which indicates that only 7.2% of the variation of stock price is affected or determined by the explanatory variable DPS. The simple correlation coefficient (r) between DPS and MPS is 0.27, which indicates that there is a poor positive relationship between DPS and MPS of HGICL. Since r is less than P.E. (r), the value of r is not significant.

AICL

The result indicated by table no. 6, shows that the regression constant a is 127.84, which indicates that the average MPS would be Rs. 127.84 if the DPS were zero. Again the result shows that the regression coefficient (b) is 3.45, which indicates that there is positive correlation between DPS and MPS of AICL. one rupee increase in DPS causes Rs. 3.45 increase in the market price of share of AICL. The coefficient of determination (r^2) is 0.13, which indicates that only 13% of the variation of stock price is affected by explanatory variables DPS. The simple correlation coefficient (r) between DPS and MPS is 0.37, which indicates that there is a poor positive correlation or relationship between DPS and MPS of AICL. But, since r is greater than P.E. (r) and less than 6 X P.E. (r) (=1.2), we can say with certainly the correlation is not significant.

Pooled Average

To find the result as a whole concept the researcher try to find the pooled result. By considering the above table no. 6, the regression constant or intercept coefficient (a) is 265.76, which shows that average MPS would be Rs. 265.76, if the DPS of the insurance companies were zero. The result shows that the slope of regression line (b) is which indicates that positive correlation exist between DPS and MPS of observed insurance companies in average. One rupee increase in DPS causes Rs. 1.64 increase in the market price of stock of the observed insurance companies. The coefficient of determination (r^2) is 0.08, which indicates that only 8% of the variation of stock price is affected or determined by the explanatory variable DPS. The simple correlation coefficient (r) between DPS and MPS is 0.28, which indicates that there is a poor positive correlation as well as relationship between DPS and MPS of observed insurance companies in average. But since (r) is greater than its P.E (r) but less than P.E. (r) X 6 (=1.62), we can say with certainly whether the correlation is not significant.

2. Simple correlation and Regression Analysis between EPS and MPS

Table No. 7

Simple correlation and Regression Analysis between EPS and MPS

Insurance Companies	Reg. Model	a	b	S.E. (e)	R	r^2	S.E. (r)	P.E. (r)	Significant/ Insignificant
NICL	y = a+bx	351.85	4.18	35.94	0.27	0.075	0.41	0.23	Insignificant
EICL		-704	19.78	32.87	0.93	0.865	0.06	0.04	Significant
UICL		126.359	2.384	56.45	0.23	0.0529	0.43	0.29	Insignificant
HGICL		231.032	-1.08	72.64	-0.11	0.0121	0.44	0.29	Insignificant
AICL		116.44	1.38076	57.46	-0.51	0.26	0.26	0.223	Insignificant
Pooled Average		19.17	8.79	66.57	0.80	0.64	0.161	0.108	Significant

The above table no. 7 has contained the different indicators (see appendix -3) helpful to analyze the simple correlation and regression between EPS and MPS of the observed five insurance companies along with their pooled average, where as EPS is independent variable and MPS is dependent variable. With the help of these indicators, the writer come to the following conclusions:

NICL

The regression constant or intercept coefficient (a) is 351.85, which shows that average MPS would be Rs. 351.85, if the independent variable (i.e. EPS) were zero. The result shows that the slope of regression line (b) is 4.18, which indicates that positive correlation exists between EPS and MPS of NICL. One rupee increase in EPS causes Rs. 4.18 increase in the market price of share of insurance company. The coefficient of determination (r^2) is 0.075, which indicates that only 7.5% of the variation of stock price is affected or determined by the explanatory variable EPS. The simple correlation (r) between EPS and MPS is 0.27, which indicates that there is a lower positive relationship between EPS and MPS of NICL But, since r is more than P.E. (r) and less than 6 X P.E. (r) (= 1.68) we can not say with certainly the correlation is not significant.

EVICL

The regression constant or intercept coefficient (a) is 104, which shows that the average MPS would be Rs. 704, if EPS were zero. The result shows that the slope of the regression line (b), is 19.78, which indicates that positive correlation exists between EPS and MPS of EICL. One rupee increase in EPS causes Rs. 1978 increase in the market price of stock of EICL. The coefficient of determination (r^2) is 0.8625, which indicates that 86.25% of the variation of stock price is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS of EICL is 0.93, which indicates that there is a strong positive relationship between EPS and MPS of EICL. But, since r is more than P.E. (r) and again greater than 6 X P.E.(r), we can say with certainly the correlation is significant. It implies that the increment or decrement in price of stock depends upon the EPS.

UICL

The regression constant or intercept coefficient (a) is 126.359, which shows that the average MPS would be Rs. 126.359, if the EPS were zero. The result shows that the slope of the regression line (b) is 2.384, which implies that positive correlation exists between MPS and EPS of UICL. One rupee increase in EPS causes Rs. 2.384 increase in the market price of share of the UICL. The coefficient of determination (r^2) is 0.0529, which indicates that only 5.29% of the variation of stock price is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.23 which indicates that there is a poor positive correlation or relationship between EPS and MPS. But since r is less than its P.E. (r), the value of r is not significant. It implies that the incensement or decrement in price of stock does not depends upon the EPS.

HGICL

The regression constant or intercept coefficient (a) is 231.032, which shows that the average. MPS would be Rs. 231.032, if EPS were zero. The result shows that the slope of regression line (b) is - 1.08 which indicates that negative correlation exists between EPS and MPS of HGICL. One rupee increase in EPS causes Rs. 1.08 decrease in the market price of stock of the company. The coefficient of determination (r^2) is 0.0121, which implies that only 1.21% of the variation of stock price is affected or determined by the explanatory variables EPS. The simple correlation coefficient (r) is - 8.11, which indicates that there is a negative relationship between EPS and MPS

of HGICL. But, since r is less than P.E.(r), the value of r is not significant, which implies that the increment or decrement in price of stock does not depends upon the EPS.

AICL

The regression constant or intercept coefficient (a) is 116.44, which shows that the average MPS would be Rs. 116.44, if EPS were zero. The result shows that the slope of regression line (b) is 1.38076, which indicates that the positive correlation exists between EPS and MPS of AICL. One rupee increase in EPS causes Rs. 1.33076 in market price of share of the insurance company. The coefficient of determination (r^2) is 0.26 which indicates that only 26% of the variation of stock price is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.51, which indicates that there is negative relationship between EPS and MPS of AICL. But, since r is less than its P.E. (r), the value of r is not significant. It implies that the incensement or decrement in price of stock does not depend upon EPS.

Pooled Average

The regression constant or intercept coefficient (a) is 19.17, which shows that average MPS would be Rs. 19.17 if EPS were zero. The result shows that the slope of regression line (b) is 8.79, which indicates that positive correlation exists between EPS and MPS of observed insurance companies in average. One rupee increase in EPS causes Rs. 8.79 increase in the market price of stock of observed insurance companies. The coefficient of determination (r^2) is 0.64, which indicates that 64% of the variation of stock price is affected or determined by the explanatory variable EPS. The simple correlation coefficient (r) between EPS and MPS is 0.80, which indicates that there a strong positive correlation or relationship between EPS and MPS of observed insurance companies in average. But since r is greater than P.E. (r) and again greater than 6 P.E. (r), the value of correlation coefficient is significant. It implies that the incensement or decrement in price of stock depends upon EPS.

3. Simple correlation and Regression Analysis between DPR and MPS

Table No. 3

Simple correlation and Regression Analysis between DPR and MPS

Insurance Companies	Reg. Model	a	B	S.E. (e)	R	r^2	S.E. (r)	P.E. (r)	Significant/ Insignificant
NICL	y = a+bx	400.99	2.76	42.67	0.95	0.902	0.044	0.023	Significant
EICL		362.08	1.36	191.20	0.46	0.21	0.35	0.23	Insignificant
UICL		121.71	0.856	50.76	0.43	0.185	0.36	0.24	Insignificant
HGICL		182.07	0.43	71.77	0.204	0.042	0.43	0.29	Insignificant
AICL		117.67	0.70	26.39	0.675	0.455	0.24	0.162	Insignificant
Pooled Average		243.12	1.145	53.13	0.51	0.26	0.33	0.22	Insignificant

The above table no. 8 has contained the different indicators (see appendix 4) helpful to analyze the simple correlation and regression between DPR and MPS of the observed five insurance companies along with their pooled average, where DPR is independent variable and MPS is the dependent variable with the help of these indicators, we can come to the following conclusions:

NICL

The regression constant or intercept coefficient (a) is 400.99, which shows that the average MPS would be Rs. 400.99 if the DPR were zero. The result shows that the slope of the regression line (b) is 2.76, which indicates that positive correlation exists between DPR and MPS of NICL. One percent increase in DPR causes Rs. 2.76 increase in market price of share. The coefficient of determination (r^2) is 0.902, which indicates that only 90.2% of the variation of stock price is affected or determined by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.95, which indicates that there is strong positive relationship between DPR and MPS of NICL. But, since r is more than P.E. (r) and again greater than 6 X P.E.(r) (=0.156), the value of r is significant. It implies that the incensement or decrement in price of stock does not depend upon the DPR.

EICL

The regression constant or intercept coefficient (a) is 362.08, which shows the average MPS would be Rs. 362.08 if the DPR were zero. The result shows that slope

of the regression line (b) is 1.36, which indicates that positive correlation exists between DPR and MPS of EICL. One percent increase in DPR causes Rs. 1.36 increase in the market price of stock of the EICL. The coefficient of determination (r^2) is 0.21, which indicates that 21% of the variation of stock price is affected or determined by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.46, which indicates that there is a low degree of positive relationship between DPR and MPS of EICL. But, since r is less more than P.E. (r) and less than 6 X P.E.(r) (=1.38), we cannot say with certainly whether the correlation is significant or not.

UICL

By considering about table no. 8, the regression constant or intercept coefficient (a) is 121.71, which shows that the average MPS would be Rs. 121.71 if DPR were zero. The result shows that the slope of regression line (b) is 0.856 which indicates that positive correlation exists between DPR and MPS of EICL. One percent increase in DPR causes Rs. 0856 increase in the market price of stock of UICL. The coefficient of determination (r^2) is 0.185, which indicates that 18.5% of the variation of stock price is affected or determined by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.43, which indicates that there is a poor or lower positive relationship between DPR and MPS of UICL. But, since r is more than P.E. (r) but less than 6 X P.E. (r) (=1.44), we can say with certainly the value of correlation is not significant.

HGICL

The regression constant (a) is 182.07, which shows that the average MPS would be Rs. 182.07, if DPR were zero. Again the result shows that the slope of regression line (b) is 0.43, which indicates that positive correlation exists between DPR and MPS. One percent increase in DPR causes Rs. 0.43 increase in the market price of stock of stock of HGICL. The coefficient of determination (r^2) is 0.042, which indicates that only 4.2% of the variation of stock price is affected on determined by the explanatory variable DPR. The simple correlation coefficient (r) between DPR and MPS is 0.204, which indicates that there is a low positive relationship between DPR and MPS of HGICL. But, since (r) is less than P.E. (r) we can say with certainly the value of correlation is insignificant. It implies that the incensement or decrement in price of stock does not depends upon the DPR.

AICL

The regression constant or intercept coefficient (a) is 117.67, which shows that the average MPS would be Rs. 117.67, if the DPR were zero. The result shows that the slope of regression line (b) is 0.70, which indicates that positive correlation exists between DPR and MPR of AICL. One percent increase in DPR causes Rs. 0.70 increase in the market price of stock of AICL. The coefficient of determination (r^2) is 0.455, which indicates that only 45.55% of the variation of stock price is affected or determined by the explanatory variable DPR. The simple correlation (r) between DPR and MDP is 0.675, which indicates that there is strong relationship between DPR and MPS of AICL. But, since r is more than P.E. (r) and less than 6 X P.E. (r) (=0.97), we can say with certainly whether the correlation is not significant.

Pooled Average

The regression constant or intercept coefficient (a) is 243.12, which shows that the average MPS would be Rs. 243.12, if the DPR were zero. Again, the result shows that the slope of regression line (b) is 1.145, which indicates that positive correlation exists between DPR and MPR of observed insurance companies in average. One percent increase in DPR causes Rs. 1.145 increase in the market price of observed samples. The coefficient of determination (r^2) is 0.26, which indicates that only 26% of the variation of stock price is affected or determined by the explanatory variable DPR. the simple correlation coefficient (r) between DPR and MPS is 0.51, which indicates that there is moderate relationship between DPR and MPS of observed insurance companies. But, since (r) is more than P.E. (r) and less than 6 X P.E. (r) (=1.32), we cannot say with certainly whether the value of correlation is significant or not. So we conclude that something out of this data the relationship being insignificant.

4. Simple correlation and Regression Analysis between DY and MPS

Table No. 9

Simple correlation and Regression Analysis between DY and MPS

Insurance Companies	Reg. Model	a	b	S.E. (e)	R	r^2	S.E. (r)	P.E. (r)	Significant/ Insignificant
NICL	y = a+bx	415.73	24.058	46.53	0.929	086	0.063	0.042	Significant
EICL		348.47	14.59	194.47	0.47	0.22	0.35	0.24	Insignificant
UICL		113.38	16.25	49.71	0.52	0.27	0.33	0.22	Insignificant
HGICL		184.62	3.16	72.31	0.168	0.028	0.43	6.29	Insignificant
AICL		136.65	1.23	34.91	0.103	0.0106	0.44	0.30	Insignificant
Pooled Average		231.78	15.37	48.19	0.62	0.38	0.27	0.18	Insignificant

The above table no. 9 has contained different indicators (see appendix -5) helpful to analyze the simple correlation and regression between DY and MPS of the observed five insurance companies along with their pooled average, where DY is an independent variable and MPS is the dependent variable. With the help of there indicators, the researcher come to the following conclusions:

NICL

The regression constant or intercept coefficient (a) is 415.73, which shows that the average MPS would be Rs. 415.73 if the DY were zero. The result again shows that the slope of regression line (b) is 24.058, which indicates that positive correlation exists, between DY and MPS of NICL. One percent increase in dividend yield (DY) causes Rs. 24.058 increase in the market price of share of NICL. The coefficient of determinations (r^2) is 0.86, which implies that 86% of the variation of stocks price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between DY and MPS is 0.929, which indicates that there is a high degree of positive relationship between DY and MPS of NICL. Here since r is greater than 6 P.E (r) (=0.252), the value of (r) is considered to be significant it implies that the incensement or decrement in the price of stock depends upon DY.

EICL

The regression constant or intercept coefficient (a) is 348.67, which shows that the average MPS would be Rs. 348.47 if DY were zero. The result again shows that

the slope of regression line (b) is 14.59, which indicates that positive correlation exists between DY and DY causes Rs. 14.59 increase in the market price of stock of the FICL. The coefficient of determination (r^2) is 0.22, which indicates that only 22% of the variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) is 0.47 which indicates that there is near about moderate degree of relationship between DY and MPS of EICL. But, since r is greater than P.E. (r) (=1.44), we conclude something out of this data that the relationship being insignificant.

UICL

The regression constant (a) is 133.38, which shows that average MPS would be Rs. 113.38 if DY were zero. The result shows that the slope of the regression line (b) is 16.25, which indicates that positive correlation exists between DY and MPS of UICL. One percent increases in DY causes Rs 16.25 increases in market price of stock of UICL. The coefficient of determination (r^2) is 0.27 which indicates that 27% of variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between Dividend Yield (DY) and market price per share (MPS) is 0.521 which indicates that there is a moderate positive relationship between DY and MPS of UICL. But, since r is ore than P.E. and less than 6 X P.E. (=1.32), we can say with certainly whether the value of correlation coefficient is not significant.

HGICL

The regression constant (a) is 184.62, which shows that the average MPS would be Rs. 184.62 if DY were zero. The result shows that the slope of regression line (b) is 3.16, which indicates that positive correlation exists between DY and MPS of the HGICL. One percent increase in DY causes Rs. 3.16 increases in the market price of stock of HGICL. The coefficient of determination (r^2) is 0.028, which indicates that only 2.8% of variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between DY & MPS is 0.168, which indicates that there is a poor or lower positive relationship between DY and MPS of HGICL. But, since r is less than P.E. (r) the value of r is not significant.

AICL

The regression constant (a) is 136.65, which shows that the average MPS would be Rs. 136.65 if the DY were zero. The result shows that the slope of regression line

(b) is 1.23, which indicates that positive correlation exist between DY and MPS of AICL. One percent increase in DY causes Rs. 1.23 increase in the market price of stock of the company. The coefficient of determination (r^2) is 0.0106, which implies affected or determined by the explanatory variable DY. The simple correlation coefficient (r) is 0.103, which indicates that there is lower degree of relationship between DY and MPS of AICL. Since (r) is less than P.E. (r), the value of (r) is not significant.

Pooled Average

The regression constant or intercept coefficient (a) is 231.78, which shows that average MPS would be Rs. 231.78 if DY were zero. The result shows that the slope of regression line (b) is 15.37, which indicates that positive correlation exists between DY and MPS of observed insurance companies in average. One percent increase in DY causes Rs. 15.37 increases in the market price of stock of observed insurances. The coefficient of determination (r^2) is 0.38, which implies that 38% of the variation of stock price is affected or determined by the explanatory variable DY. The simple correlation coefficient (r) between DY and MPS is 0.62, which indicates that there a high degree of positive relationship between DY and MPS of observed insurances in average. But, since r is more than P.E. (r) but less than 6 X P.E. (r) (=1.12), the researcher can say with certainly the correlation is not significant . It implies that the researcher says decrement in price of stock depends upon DY.

4.2.2 Multiple regression and coefficient determination analysis

The market price of stock depend in more than one variable. So, the results of simple regression analysis are not reliable as far, the multiple regression analysis estimates all the limitations of simple regression analysis. This part of the study is belonging to examine the relationship between two independent variables and one dependent variable. In this study, the pooled average data of the observed insurances are used for multiple regression and coefficient of determination analysis.

A. Multiple regression and coefficient of determination analysis of MPS on EPS & DPS.

The model developed for this purpose is as:

$x_1 = a_1 + b_1. x_2 + b_2.x_3$

Where,

x_1 = Market price per share (Dependent Variable)

x_2 = Earning per share (independent variable)

x_3 = Dividend per share (independent variable)

b_1 and b2 = Coefficient of net regression (or simply, regression constants)

The following results have been obtained from the multiple regression model (see appendix -6)

Table No. 10

Multiple regression and coefficient of determination analysis of MPS on EPS and DPS.

Regression Model	a_1	b_1	b_2	S1.23	R^2 1.23
$x_1=a_1+b_1\ x_1+b_2=x_2$	-114.492	14.92	-3.71	47.4632	0.80

The above table no. 10 shows the output of multiple regression analysis between MPS (x_1) and other variables [EPS (x_2) and DPS (x_3)] of the insurance in average. The regression constant a_1 is -114.492 that indicates that when EPS & DPS were zero, than MPS of observed insurance companies would be Rs. -114.492. The regression coefficient ($b_{1)}$ for insurance companies is 14.92. It indicates that one rupee increases in EPS causes Rs. 14.92 increases in MPS. And again, the result shows that another regression coefficient [b_2] is -3.71 which indicates that unitary increment in DPS causes Rs. 3.71 decreases in MPS. Thus the independent variable EPS has positive impact in MPS where as another independent variable DPS has negative impact in MPS of the observed insurances in average. As the coefficient of multiple determination $R^2$1.23 is 0.80, it means 80% variation in MPS is explained by variation in P/E ratio and DPS.

B. Multiple regression and coefficient of determination analysis of MPS on DPR and DPS.

The model formulated for this purpose is as:

x1 = a1+b1.x2+b2.x3

Where,

x_1 = Market price per share (Dependent Variable)

x_2 = Price earning ratio (independent variable)

x_3 = Dividend per share (independent variable)

a_1 = Regression constant

b_1 and b2 = Coefficient of net regression

By using the above model we have obtained the following results (see appendix -9)

Table No. 11

Multiple regression and coefficient of determination analysis of MPS on P/E ratio and DPS.

Regression Model	a_1	b_1	b_2	S1.23	R^2 1.23
$x_1=a_1+b_1\ x_2+b_2=x_3$	30.176	21.62	2.076	103.66	0.3819

By considering the above table no. 11, it shows that the result of multiple regression analysis between MPS (x1) and other two important variables P/E ratio (x_2) and DPS (x_3) of the insurance companies in average. Above table no. 11 shows that the regression constant a_1, is 30.176 that indicates that MPS of the observed insurance companies would not be below than of Rs. 30.176. It indicates that when P/E ratio and DPS equal to zero, than MPS of the observed insurance companies would be Rs. 30.176. The regression coefficient (b_1)for insurance companies is 21.62. It indicates that one times increase in P/E ratio causes Rs. 21.62 increase in MPS. Another regression coefficient (b_2) is 2.076 which indicates that one rupee increase in DPS causes Rs. 2.076 increases in MPS. Thus both independent variable have positive impact in MPS. The coefficient of multiple determination $R^2$1.23 is 0.3819. It implies that 38.19 percent variation in MPS is explained by variation in P/E ratio and DPS.

4.3 Test of Hypothesis

For this part we are concerned with the test of the relationship between dependent and independent variables. It has been tried to find whether the independent variables have statistically significant relationship with dependent variable or not. For this the researcher uses the ANOVA technique. Using ANOVA technique we will be able to make inferences about whether our samples are drawn from populations having the same mean. The basic concept of ANOVA is to test whether the samples have same mean. This test is based on pooled average data for

the five years of five insurance companies. Moreover, we only test the significance of multiple correlation coefficient. It can be tested by testing for the overall significance of regression process by "analysis of variance" (i.e. ANOVA) or F-ratio for this study.

Hypothesis Test -1

In this test we assume that there is no relationship between the dependent variable MPS (say x_1) and independent variables EPS (say x_2) and DPS (say x_3), taken collectively. We have taken the following previous used regression model for two independent variables as;

$x1 = a+b_1x_1 + b_2x_2$----------(i)

The following steps can be used test whether there is linear relationship between dependent variable x_1, and independent variable x_2 and x_3 or not i.e. whether the regression model is significant or not.

Formulation of Hypothesis

Null hypothesis, Ho: $b_1=b_2=0$ i.e. the regression model of x_1 on x_2 and x_3 is not significant or there is no linear relationship between dependent variable (x_1) and two independent variables x_2 and x_3.

Alternative hypothesis, H_1: $b_1 \neq b_2 \neq 0$ (i.e. at least one $b_1 \neq 0$). The regression equation of x_1 on x_2 and x_3 is significant. In other words, there is relationship between dependent variable x_1 and two independent variables x_2 and x_3.

Test Statistics

Under null hypothesis the analysis of variance (i.e. ANOVA) or f.. test for the test of significance of regression coefficient is given by:

$$F = \frac{Explained\ Varience}{Un\exp lained\ Varience}$$

$$= \frac{MSR}{MSE}$$

Where,

MSR= Regression mean sum of square

= Explained variance

$$= \frac{Explained\ Variation}{K-1} = \frac{SSR}{K-1}$$

K = no. of constants in the regression equation

= no. of total variable used in mode.

SSR = Regression sum of squares

$= \sum (\bar{x}_1 - \bar{x}_1)^2$

= 9168.10

MSE = Error mean sum of square = unexplained variance

$$= \frac{Unexplained\ Variation}{n-k} = \frac{SSE}{n-k}$$

Where,

SSE = Error sum of squares

= SST-SSR

= 11384.35 - 9168.10

= 2216.25

SST = Total sum of square

$= \sum (\bar{x}_1 - \bar{x}_1)^2$

= 11384.35

Table No. 12

ANOVA Table

Source of variation	Sum of squares (SS)	Degree of Freedom	Mean sum of square (M.S.)	F-ratio
Explained (Regression)	SSR=9168.10	K-1=2	MSR=4584.05	F cal $\frac{MSR}{MSE}$
Unexplained (Error)	SSE=2216.25	n-k=2	MSE=1108.125	F(2,2)=4.1367
Total	11384.35	n-1=4		

(See Appendix -8)

Table value

For (k-1, n-k) or (i.e. F2, 2) degree freedom at ~ = 0.05 i.e. 5% level of significance, the tabulated value is 19.0.

Decision

Since calculated value i.e. 4.1367 is less than tabulated value i.e. 19.00, it is not significant and hence, H0 is accepted which means that the regression equation of dependent variable x_1 (i.e. MPS) on two independent variables x_2 and x_3 (i.e. EPS & DPS) is not significant. In other words, there is no linear relationship between the dependent variable x_1 and two independent variables x_2 and x_3.

Hypothesis test -2

In this test the following steps can be used to test whether there is linear relationship between dependent variable x_1 (Say MPS) and independent variables x_2 and x_3 (say P/E ratio and DPS) or not, or in other words whether the regression model is significant or not.

Formulation of Hypothesis

Null hypothesis, Ho: $b_1=b_2=0$ i.e. the regression model of x_1 on x_2 and x_3 is not significant or there is no linear relationship between dependent variable (x_1) and two independent variables x_2 and x_3.

Alternative hypothesis, H_1: $b_1 \neq b_2 \neq 0$ (i.e. at least one $b_1 \neq 0$). The regression equation of x_1 on x_2 and x_3 is significant. In other words, there is relationship between dependent variable x_1 and two independent variables x_2 and x_3.

Test statistic : under H0 the test statistic is,

$$F = \frac{MSR}{MSE}$$

Where,

MSR = Regression mean sum of square

$$= \frac{SSR}{k-1}$$

MSE = Error men sum of square

$$= \frac{SSE}{n-k}$$

Where,

SSR = Regression sum of square

$$= \sum (\bar{x}_1 - \bar{x}_1)^2$$

= 4350.48

SST = Total sum of square

$= \sum (\bar{x}_1 - \bar{x}_1)^2$

= 11389.80

$\therefore$ SSE = Error sum of square

= SST - SSR

= 7042.71

n = No. of observation period

k = No. of constant used in regression model

Table No. 13

ANOVA Table

Source of variation	Sum of squares (SS)	Degree of Freedom	Mean sum of square (M.S.)	F-ratio
Explained (Regression)	SSR=4350.48	K-1=2	MSR=2175.24	F cal $\frac{MSR}{MSE}$
Unexplained (Error)	SSE=7042.71	n-k=2	MSE=3521.35	F(2,2)= 0.6177
Total	SST = 11393.19	n-1=4		

Hence calculated F (2,2) = 0.6177

The tabulated value of F at 5% level of significant for two tailed test with d.f. (2,2) is, F 0.05(2,2) = 19.0.

Decision

Since calculated value of F is less than the tabulated value of F, it is not significant and hence, H0 is accepted which means that the regression equation of dependent variable x_1 (i.e. MPS) on two independent variables x_2 and x_3 (i.e. P/E ratio and DPS) is not significant in other words, there is no linear relationship between the dependent variable x_1 (MPS) and two independent variables x_2 (i.e. P/E ratio) and x_3 (i.e. DPS).

4.3 Major Findings

A. Findings from financial indicators analysis

1. EPS of the insurance companies in average is fluctuating year by year. Highly fluctuation occurred in case of Nepal Insurance Company's EPS. EICL has got success to keep the increasing to trend of EPS through out the study period. AICL has least EPS(53.24). It influences shown the least condition among the observed five insurance companies. In the study period the researcher found that UICL and AICL are in the lowest position regarding earning capacity. In an average HGICL is in the above position than pooled average regarding the earning capacity it implies that HGICL is also above the average EPS line through out the study period.
2. Mainly the DPS of all sample companies are in fluctuating trend. More over, regarding the direction of insurance board, they all have to meet the criterion charged by board, mostly insurance companies have to reach their paid up capital till ten million with in the period of 2012 A.D. Thus they can't success to paid dividend as cash. Due to this, in year 2008/03 and 2009/04 most of the companies did not pay the dividend. EICL and NICL have got success to keep it above the average pooled line through out the study period. Except the F.Y. 2008/03 A.D., the company is trying to adopt constant dividend policy.
3. In average, insurance companies have the near about 41% dividend pay out ratio. EICL has kept its DPR more than 50% in average. But yearly basis it has a deep fluctuation. In initial period NICL has kept its DPR near about 83% but has failed to maintain its ratio till 2009 A.D. UICL has the least fluctuating DPR and above the pooled average line. HGICL and AICL have most fluctuating DPR. They have zero DPR in 2008/03 and 2009/04 fiscal year.
4. MPS of each insurance companies are also in fluctuating trend, average pooled MPS over the period is 287.92 where as the same of NICL along is Rs. 520, which is almost two times greater than average pooled MPS. More over, MPS of EICL has kept its MPS more than pooled average MPS. Fluctuating trend of MPS of EICL is very high. And UICL, HGICL and AICL have lower MPS than pooled average MPS.
5. In case of dividend yield, EICL is in highest position among the all observed companies. NICL has higher yield than pooled average dividend yield. UICL is in

lowest position regarding the earning yield. No. of them has one % yield in year 2009/04. Thus, dividend yield analysis says that the pooled average is 7.38 from the analysis of coefficient of variation of dividend yield; we come to know that the dividend yield is fluctuating in all sample companies.

B. Finding from correlation and regression analysis

1. Correlation between DPS and MPS is fairly positive in case of all observed sample companies. Among them EICL has strong positive relationship between DPS and MPS. More over correlation between DPS and MPS show significant relationship in case of NICL. This implies that the liquidity position is taken as considerable factor in determining the dividend. But in case of HGICL, correlation between DPS & MPS shows insignificant.
2. Correlation between EPS & MPS is really positive in case of NICL, EICL and UICL but HGICL & AICL have negative correlation between EPS and MPS. According to the pooled average result, there is strong relationship among the sample companies and with significant relationship between EPS and DPS.
3. In other hand, relationship between DPS and MPS of the sample companies show that the coefficient of determination (r^2) is 0.08, which indicates that over ally 8%variation of MPS is explained by the explanatory variable DPS. At the same time the regression analysis of all sample companies show that increase in DPS causes to increase in MPS. The values of regression constant (a) are relatively high incase of MPS on DPS in all cases. It means there are other many factors those affect the market price of stock.
4. In case of regression analysis we can observe the regression equation of MPS on EPS of EICL is statistically significant. In all cases MPS on EPS are not statistically significant except the case of EICL and NICL.
5. Correlation between DY and MPS is positive in all cases. Likewise correlation between DPR and MPS is positive. It seems that DY and DPR are major infusing factor to determine the market value of share.
6. As for as multiple regression analysis of MPS on DPS and EPS shows that the value of regression constant (a) is negative. It indicates that the major determinants of market value of stock are DPS and EPS in all cases. At the same time regression coefficient b_1 is positive but b_2 is negative. It is explained that the MPS is depends upon EPS rather than DPS. In other hand, the coefficient of

multiple regression is 0.80. It implies that 80% variation on MPS is affected by variation in EPS and DPS.

7. Likewise, in case of multiple regression analysis of MPS on P/E ratio and DPS shows that, the value of regression constant (a) is positive. It explains that market price of stock is affected by other influencing factor. It means that the P/E ratio and DPS have lower impact rather than other variables the regression constant (b_1) has positive value where as b_2 has also positive value. It means that the value of stock is highly affected by P/E ratio rather than DPS. In case of this analysis 38.19% of variation in the market price of stock is brought by P/E ratio and DPS (i.e. explanatory variables).
8. Test of hypothesis of MPS on DPS & EPS shows that there is no linear relationship between the dependent variable (i.e. MPS) and independent variables (i.e. DPS and EPS).
9. The second hypothesis test of MPS on P/E ratio and DPS shows that there is again no linear relationship between MPS and DPR and DPS.

CHAPTER -V

SUMMARY, CONCLUSION & RECOMMENDATION

Introduction

This chapter implies on summarizing the study held with the researcher's conclusion. The next attempt in this chapter will be made for the recommendations on the basis of findings. For this whole purpose the chapter has been divided into three parts as: summary conclusion and recommendation.

5.1 Summary

Every investor expects good earnings on his/her share capital investment. The true assumption is that the firm that is not able to distribute fair dividend, will not be able to raise further equity capital from capital market. Thus dividend policy of the firm is a major function of financial management as well as financial manager. Dividend are payments made to stock holders from a firm's earnings in return to their investment, whether those earnings were generated in the current period or in previous periods and policy refers to the decision about how much earnings at what form should be distributed. Thus dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained or invested in the firm.

5.2 Conclusion

In this paper the researcher attempts the impact of dividend policy on stock price. For the research various insurance companies listed in the Nepal stock exchange (NESE) were selected. All of the data were collected from the report published by NEPSE and annual report of selected companies. To make the research more reliable different types of analysis have been conducted to find the appropriate relationship between market price and other variables which affect the dividend. To find the conclusion of the major problem, the researcher has taken various reviews.

1. The main objective of the research was that whether the insurance company followed the suitable dividend policy or not. For this statement, the researcher has found that no insurance companies apply the suitable dividend policy as expected

by their stock holder. It is because were directed by the Nepalese company law and Rastriya Beema Samitee.

It is found the study that insurance companies are paying dividend, but there is no consistency in dividend distribution in all sample companies observed. Further more details no insurance company has paid any cash as well as other form of dividend in year 2008/03. Again HGICL and AICL had not paid the dividend in 2 years 2007/02 and 2008/03. Thus, the research shows that none of the insurance companies have well defined and appropriate policy regarding dividend payment.

2. The researcher again meet to the conclusion that dividend decision has lower effect to determine the market price of share. Where as earning per share has very much effect on market rice of stock. However, in case of some companies, stock price is very much affected by increasing the DPR. In case of dividend pay out ratio, it is also not constant. It is fluctuating annually in case of all sample companies. The market price of stock is influenced by the dividend decision in most of the cases. However the influences is not much high.
3. If we take the consideration of both effect (i.e. EPS and DPS) at the time the research shows that earning has positive impact on MPS where as dividend per has negative impact. However, if we take both effect of P/E ratio and DPS, the test shows the positive impact on market price of share. Thus, researcher comes to the final conclusion that dividend decision has positive impact on market price of share.
4. Since the current investment environment is serious the Rastriya Beema Samitee declared the high capital criterion to the insurance companies. Thus, none of them are capable to distribute the dividend. Thus, such body should give the attention towards the regular income of shareholders. The decision regarding dividend payment should not be biased and it should always in favor of the prosperity and betterment of the company.

5.3 Recommendation

Based on the finding of the research, the following recommendations are made for the better applications of the dividend policy to have the strong MPS in the capital market.

* Considering the research, most of the companies, stock price is affected by the earning per share. But EPS of all sample firms except EICL and HGICL are in the fluctuating trend. It may give uncertainty to shareholders and negatively affect the market price of the respective shares. So, those companies should search the fruitful investment opportunities.
* From analysis, it has been found that non of the sample companies have followed consistent dividend policy as a result of which a high degree of fluctuation is observed in DPR as well as DPS. More over non of the companies have in satisfactory level in case of DPR. It may not satisfy the expectation of shareholders, it indicate that all of the firm should consider the psychological value of shareholder.
* The management of EICL need not give much focus on the dividend per share but focus on consistent dividend policy. It should give also the attention on other factors.
* To increase the market value of stock the management of UICL, HGICL and AICL should give the high attention on dividend pay out ratio; the earning should be distributed in form of dividend.
* The legal rules and regulation must be in favor of investor to exercise the dividend practice and to protect the shareholders rights.
* Current investment environment is very serious. However, the Rastriya Beema Samitee declared the high capital criterion to the insurance companies. Thus non of them are capable to distribute the dividend. Thus, such body should give the attention towards the regular income of shareholders.
* The decision regarding dividend payment should not be biased and it should always in favor of the prosperity and betterment of the company.
* The test of hypothesis indicated the truth that there is not any uniformity between MPS and DPS and EPS as well as P/E ratio. Therefore, all the firms are suggested to analyze their respective sector to get in to the decision.

The further researcher may study the impact of other factors such as retained earning, net worth on market price of share.

BIBLIOGRAPHY

Books

Gautam, R.R. and Kiran Thapa (2000). ***Capital Structure Management.*** Asmita Books Publishers and Distributers, Kathmandu.

Ghimire, S.R. (2005). ***Financial Management (Theory & Practice).*** K.P. Pustak Bhandar, Dillibazar, Kathmandu.

Gitmen, Lawrence J. ((1988). ***Principle of Managerial Finance.*** (7th edition) New York; Harper Collins Collage Publisher.

J. Fred Weston, Basely, E.F. Brigham. ***Essential of Managerial Finance.*** Eleventh edition.

J. Fred Weston, Eugence F. Brigham. ***Managerial Finance.*** (7th edition) Holt-saundors International edition.

J. Fred Weston, Thomas S.E. Copland ***.Managerial Finance.*** (Ninth edition) Dryden Press, New York.

Jack Clark (19990). ***Investment.*** New York; Mc-Graw Hill, International edition.

James C. Van Horne. ***Financial Management and Policy.*** (20th edition) Prentice Hall, New Delhi)

Khan, M.Y. and Jain, P.K. (1995). ***Financial Management.*** New Delhi; Tata Mc-Graw Hill Publishing Co. Ltd.

Kothari, C.R. (1978). ***Quantitative Techniques.*** New Delhi: Vikash Publishing House Pvt. Ltd.

Lavin, Richard R. (1995). ***Quantitative Techniques for Management.*** (3rd edition) Singapore Mc-Graw Hill.

Pradhan, R.S. ***Financial Management***. (First edition), Buddha Publisher, Kathmandu, Nepal.

Pradhan, Surendra, ***.Basis of Financial Management.*** (3rd edition) Book Palace Publisher Ktm, Nepal

Regmi, L.K., P.R. Joshi, A.K. Chaudhary and G. Fago (2004). ***Production and Operations Management.*** Buddha Academic Publishers and Distributors Pvt. Ltd., Kathmandu.

Sharpe, Alexender, Bailey **.Investments"** Theory and Problem Outline Series.

Shrestha, Monohar Kumar, **"Financial Management (Theory & Practice)"**, Curriculum Development Centre, T.U. 1980.

Willim H. Dean, **"Finance"** New York: The Dryden Press.

Journals, Reports and Periodicals

Deepak Chawla & Srinivasan, **"Impact of Dividend & Retention on Share Price"**, An Economic Study, Vol. VIV (July-Sept. 1987) PP 137-140).

Doron Nissim and Amir Ziv, **"Dividend Changes and Future Profitability"**, Journal of Finance Vol. LVI No. 6 (Dec. 2001).

F. Modiglani and M.H. Miller, **"Dividend Policy, Growth & Valuation of Share"**, Journals of Business. (Oct. 1961) PP 411-433.

James C. van Horne and John. G. Mc Donald, **"Dividend Policy and New Equity Financing"**, Journal of Finance (Vol. XXXI May 1971) PP 507.

James, E. Walter, **"Dividend Policy and Common Stock Price"**, Journal of Finance (March, 1996) PP 29-41.

Pradhan, R.S. **"Stock Market Behavior in a Small Capital Market"**; A case study of Nepal, The Nepalese Management Review, (Vol. IX No. 1 1993) PP 23-49.

Ross Watt, **"Components on the Information Contents of Dividend"**, Journals of Business, Vol. 49 (Jan. 1976) PP 81-85.

Upinder S. Dhillon and Herb Johnson **"The Effect of Dividend Changes on Stock and Bond Prices"**, Journal of Finance, Vol. XLIX, No. 1 (March 1994)

Dissertations:

Adhikari, Navraj (1999) **"Corporate Dividend Practice in Nepal"**, An Unpublished MBA Thesis (CDM T.U.).

Basanta Shrestha(2008) "**Dividend and Stock Prices",** An unpubliahed Thesis T.U

Bhattarai, Manoj (2002) **"Dividend Policy and its Impact on Stock Valuation"**, An Unpublished MBS Thesis (Shanker Dev Campus T.U.).

Bishnu Pd Adhikari(2008) "**Dividend policy and its impact on stock price of selected manufacturing enterprises and trading companies of Nepal"** T.U

Gautam, R.R. (2008) **"Dividend Policy in Commercial Banks: A comparative Study of NGBL, NIBL and NABIL"**, An unpublished MBA Thesis (SDC, T.U.).

Ghimire, Prabin Kumar (2002) **"Dividend Policy of Listed Companies"** An unpublished MBS Thesis (SDC, T.U.).

Niroula, Dilip (2003) **"Impact of Dividend Policy on Market Price of Stock"**, An unpublished MBS Thesis (CDM, T.U.)

Rajbhandari, P.L. (2001) **"Dividend Policy: A comparative Study between Banks and Insurance Companies"**, An unpublished Thesis Paper (SDC, T.U.).

Timilsena Sadakar (1997) **"Dividend and Stock Prices"**, An unpublished MBA Thesis (CDM T.U.).

Appendix -1

Earning per share of sample firms

Year	Earning per share					
	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	61.56	42.89	18.62	26.62	8.06	31.55
2006	59.85	61.05	14.77	30.30	10.80	35.35
2007	43.48	65.20	14.80	25.50	14.81	32.76
2008	36.46	61.74	5.64	38.41	16.17	31.68
2009	*	57.22	11.68	39.86	4.00	22.55

Source: Annual report of sample firm

Computed as: $\frac{Total\ earning\ to\ common}{No.\ of\ \ shares}$

(Star denoted no data available due to audit)

Dividend per share of sample firms

Year	Dividend per share					
	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	50.00	20.00	9.44	15.00	5.013	19.89
2006	50.00	20.00	7.54	15.00	5.013	19.51
2007	10.02	20.00	6.61	15.00	7.00	11.73
2008	10.00	100.00	3.77	0	0	22.75
2009	-	0	0	0	0	0.00

Source: Annual report of sample firm

Computed as: $\frac{Total\ dividend}{No.\ of\ \ shares}$

Dividend pay out of sample firms

Year	Dividend pay out %					
	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	81.22	46.63	50.68	56.35	62.199	59.42
2006	83.55	32.76	51.11	49.50	46.42	52.67
2007	23.05	30.67	44.61	58.82	47.26	40.88
2008	27.45	161.96	66.91	0	0	51.26
2009	0	0	0	0	0	0.00

Source: Annual report of sample firm

Computed as: $\frac{Total\ dividend}{Earning}$

Market price per share of sample firms

Year	Market Price per share					
	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	630	170	127	116	180	244.60
2006	620	440	228	285	162	347.00
2007	520	610	190	225	115	332.00
2008	456	610	138	190	110	300.80
2009	375	350	105	165	131	225.20

Source: Nepal stock exchange (Field visited)

Dividend yield of sample firms

Year	Dividend yield %					
	NICL	EICL	UICL	HGICL	AICL	Pooled Average
2005	7.94	4.76	4.10	6.41	2.7%	5.198
2006	9.65	4.55	3.30	5.26	3.09	5.17
2007	1.93	3.28	3.47	6.67	6.09	4.29
2008	2.19	16.39	2.73	0.00	0.00	4.26
2009	0.00	0.00	0.00	0.00	0.00	0.00

Source: Annual report of sample firm

Computed as: $Yield = \frac{DPS}{MPS}$

Table No. 1

Analysis of EPS

Year	EPS		ETCL	
	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$
2005	61.56	453.69	42.89	216.97
2006	59.85	383.77	61.05	11.77
2007	43.48	10.68	65.20	57.45
2008	36.43	14.67	61.74	16.97
2009	0.00	1620.86	57.22	0.16
Sum	201.32	862.81	288.10	303.32
Mean	40.26	22.28	57.62	7.79
S.D.		55.36		13.51
C.V.				

Year	UICL		HGICL		AICL	
	(X)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$
2005	18.62	30.47	26.62	30.47	8.06	7.34
2006	14.77	2.79	30.30	3.38	10.8	0.0009
2007	14.81	2.92	25.50	44.09	14.81	16.32
2008	5.64	55.65	38.41	39.31	16.17	29.16
2009	11.68	2.01	39.86	59.60	4.00	45.83
Sum	65.52	93.85	160.69	176.85	53.84	98.651
Mean	13.10		32.14		10.77	
S.D.	4.33		5.94		4.44	
C.V.	33%		18.50		41.24	

Analysis of DPS

Year	NICL		EVICL		UICL		HGICL		AICL	
	DPS(X)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$
2005	50.00	676	20.00	144	9.44	15.76	15.00	36	5.013	2.58
2006	50.00	676	20.00	144	7.54	4.28	15.00	36	5.013	2.57
2007	10.02	195.44	20.00	144	6.61	1.30	15.00	36	7.00	12.89
2008	10.00	196.00	100.00	4624	.77	2.89	0.00	81	0.00	11.63
2009	0.00	576	0.00	1024	0.00	29.92	0.00	81	0.00	11.63
Sum	120	2319.44	160				45	270	17.026	41.30
Mean	24.004		32	6080	27.36	54.15	9		3.41	
S.D.	21.54		34.87	Mean	5.47		7.348		2.87	
C.V.	89.74		108.97	S.D.	3.29		81.16		84.28	
				C.V.	160.16					

Analysis of dividend pay out ratio (%)

Year	NICL		ECL		UICL		HGICL		AICL	
	DPR (X)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$
2005	81.22	1456.95	46.63	60.37	50.68	64.32	56.35	548.49	62.199	962.80
2006	83.55	1640.25	32.76	468.28	51.11	71.40	49.50	274.56	46.42	232.56
2007	23.05	400	30.67	563.11	44.61	3.80	58.82	670.29	47.26	288.88
2008	27.45	243.36	161.96	107.56	66.91	588.06	0.00	1084.38	0.00	971.57
2009	0.00	1853.30	0.00	2959.36	0.00	1819.87	0.00	1084.38	0.00	971.57
$\sum x$	215.27	5593.86	272.02		213.31	2547.45	164.67	3662.10	155.879	3427.38
$\bar{x}$	43.05		54.40		42.66		32.93		31.17	
±	33.45		28.83		22.57		27.06		26.18	
C.V.	77.69		53%		52.91		82.18		84.10	

Analysis of market price of share

Year	NICL		EICL		UICL		HGICL		AICL	
	(X)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$
2005	630	12100	170	70756	127	936.36	116	6432.04	180	1632.16
2006	620	10000	440	16	228	4956.16	285	7885.44	162	501.76
2007	520	0	610	30276	190	1049.76	225	829.44	115	605.16
2008	456	4096	610	30276	138	384.16	190	38.44	110	876.16
2009	375	21025	350	7396	105	2766.76	165	973.44	131	73.96
$\sum x$	2601	47221	2180	138720	788	10093.20	981	16158.8	698	3689.20
$\bar{x}$	520		436		157.6		196.20		139.6	
±	97.18		166.56		44.92		44.93		27.16	
C.V.	18.68		38.20		28.50		22.9		19.45	

Analysis of dividend yield

Year	NICL		EICL		UICL		HGICL		AICL	
	(X)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$	(x)	$(x-\bar{x})^2$
2005	7.94	12.96	4.76	1.082	4.10	1.90	6.41	7.51	2.78	0.15
2006	9.65	28.196	4.55	1.56	3.30	0.33	5.26	2.53	3.09	0.49
2007	1.93	5.81	3.28	6.35	3.47	0.56	6.67	9.00	6.09	13.69
2008	2.19	4.62	16.39	112.15	2.73	0.0001	0.00	13.47	0.00	5.71
2009	0.00	18.84	0.00		0.00	7.40	0.00	13.47	0.00	5.71
$\sum x$	21.71	70.42	28.98	121.142	13.60	10.19	18.34	45.98	11.96	25.75
$\bar{x}$	4.34		5.80		2.72		3.67		2.39	
±	3.75		4.92		1.42		3.03		2.27	
C.V.	86.47		84.86		52.48		82.63		94.95	

Appendix -2

Correlation & regression analysis

Simple correlation and regression analysis between DPS and MPS

A. Nepal Insurance Co. Ltd.

Year	DPS (X)	MPS (X)	XY	X^2	y^2
2005	50.00	630	31500	2500.00	396900
2006	50.00	620	31000	2500.00	384400
2007	10.02	520	5210	100.40	270400
2008	10.00	456	4560	100.00	207936
2009	0.00	875	0	0.00	140625
n=5	$\sum x = 120.02$	$\sum y = 2601$	$\sum xy = 72270$	$\sum x^2 = 5200.40$	$\sum y^2 = 1400261$

Mean $(\bar{x}) = 24.004$ $(\bar{y}) = 520.20$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.9398$$

coefficient of determination (r^2) = 0.888

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = \frac{0.116775960}{\sqrt{5}} = 0.052$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.035$

Independent variable: DPS (Say x)

Dependent variable: MPS (Say y)

Regression analysis of MPS on DPS or y on x is

y = a + b. x

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x$$

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

Solving there two normal equations we get

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 4.24$$

$$a = \bar{y} - b.\bar{x} = 418.42$$

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

$$= \sqrt{\frac{1400261 - 418.42 \times 2601 - 4.24 \times 72270}{3}}$$

$$= \sqrt{1841.93}$$

$$= 42.92$$

B. Everest Insurance Co. Ltd.

Year	DPS (X)	MPS (X)	XY	X^2	y^2
2005	20.00	170	3400	400	28900
2006	20.00	440	8800	400	193600
2007	20.00	610	12200	400	372100
2008	100.00	610	61000	10000	372100
2009	0.00	350	0	0.00	122500
n=5	$\sum x = 160$	$\sum y = 2180$	$\sum xy = 85400$	$\sum x^2 = 11200$	$\sum y^2 = 1089200$

Mean $(\bar{x}) = 32$ $(\bar{y}) = 436$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.54$$

coefficient of determination (r^2) = 0.29

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.32$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.21584$

Independent variable: DPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is,

y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x$$

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

Solving there two normal equations we get

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 2.57$$

$$a = \bar{y} - b.\bar{x} = 353.684$$

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

$= 181.37$

C. United Insurance Co. Ltd.

Year	DPS (X)	MPS (X)	XY	X^2	y^2
2005	9.44	127	1198.88	89.11	16129
2006	7.54	228	1719.12	56.85	51984
2007	6.61	190	1255.90	43.69	36100
2008	3.77	138	520.26	14.21	19044
2009	0.00	350	00.00	0	11025
n=5	$\sum x = 27.36$	$\sum y = 788$	$\sum xy = 4694.16$	$\sum x^2 = 203.86$	$\sum y^2 = 134282$

Mean $(\bar{x}) = 5.47$ $(\bar{y}) = 157.60$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.52$$

coefficient of determination (r^2) = 0.27

Standard error of correlation coefficient, $\text{S.E.(r)} = \frac{1-r^2}{\sqrt{n}} = 0.33$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.22$

Independent variable: DPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 7.059$$

$$a = \bar{y} - b.\bar{x} = 118.97$$

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

$= 49.66$

D. United Insurance Co. Ltd.

Year	DPS (X)	MPS (X)	XY	X^2	y^2
2005	15.00	116	1740.00	225.00	13456.00
2006	15.00	285	4275.00	225.00	81225.00
2007	15.00	225	3375.00	225.00	50625.00
2008	0.00	190	0.00	0.00	26100.00
2009	0.00	165	0.00	0.00	27225.00
n=5	$\sum x = 45$	$\sum y = 981$	$\sum xy = 9390$	$\sum x^2 = 675$	$\sum y^2 = 208631$

Mean $(\bar{x}) = 9$ $(\bar{y}) = 196.20$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.27$$

coefficient of determination (r^2) = 0.072

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.41$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times 0.41$

$= 0.276$

Independent variable: DPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{ s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 2.078$$

$$a = \bar{y} - b.\bar{x} = 177.5$$

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

$= 70.69$

E. Alliance Insurance Co. Ltd.

Year	DPS (X)	MPS (X)	XY	X^2	y^2
2005	5.013	180	902.34	25.13	32400.00
2006	5.013	162	812.106	25.13	26244.00
2007	7.00	115	805.00	49.00	13225.00
2008	0.00	110	0.00	0.00	12100.00
2009	0.00	131	0.00	0.00	17161.00
n=5	$\sum x = 17.026$	$\sum y = 698$	$\sum xy = 2519.446$	$\sum x^2 = 99.26$	$\sum y^2 = 101130$

Mean $(\bar{x}) = 3.41$ $(\bar{y}) = 139.60$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.37$$

coefficient of determination (r^2) = 0.13

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.39$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.26$

Independent variable: DPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{ s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 3.45$$

$$a = \bar{y} - b.\bar{x} = 127.84$$

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

$= 32.69$

F. Alliance Insurance Co. Ltd.

Year	DPS (X)	MPS (X)	XY	X^2	y^2
2005	19.89	244.60	4467.294	395.612	59829.16
2006	19.51	347.00	6769.97	380.64	120409.00
2007	11.73	332.00	3894.36	137.59	110224.00
2008	22.75	300.80	6843.20	517.56	90480.64
2009	0.00	225.20	0.00	0.00	50715.04
n=5	$\sum x = 73.88$	$\sum y = 1449.60$	$\sum xy = 21974.82$	$\sum x^2 = 1431.40$	$\sum y^2 = 431657.84$

Mean $(\bar{x}) = 14.766$ $(\bar{y}) = 289.92$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.28$$

coefficient of determination (r^2) = 0.08

Standard error of correlation coefficient, $\text{S.E.(r)} = \frac{1-r^2}{\sqrt{n}} = 0.41$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.28$

Independent variable: DPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{ s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 1.64$$

$$a = \bar{y} - b.\bar{x} = 265.76$$

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

$= 58.803$

Appendix -3

Simple correlation and regression analysis between EPS and MPS

A. Nepal Insurance Co. Ltd.

Year	EPS (X)	MPS (X)	XY	X^2	y^2
2005	61.56	630	38782.80	3789.63	396900
2006	59.85	620	37107.00	3582.02	384400
2007	43.48	520	22609.60	1890.51	270400
2008	36.46	456	16625.76	1329.33	207936
2009	0.00	375	0.00	0.00	140625
n=5	$\sum x = 201.37$	$\sum y = 2601$	$\sum xy = 115125.16$	$\sum x^2 = 10591.49$	$\sum y^2 = 1400261$

Mean $(\bar{x}) = 40.274$ $(\bar{y}) = 520.2$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.27$$

coefficient of determination (r^2) = 0.075

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.41$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.28$

Independent variable: EPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 4.18$

$a = \bar{y} - b.\bar{x} = 351.85$

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

$= 35.94$

B. Everest Insurance Co. Ltd.

Year	EPS (X)	MPS (X)	XY	X^2	y^2
2005	42.89	170	7291.30	1839.55	28900
2006	61.05	440	26862.00	3727.10	193600
2007	65.20	610	39772	4251.04	372100
2008	61.74	610	37661.4	3811.83	372100
2009	57.22	350	20027	3274.13	122500
n=5	$\sum x = 288.10$	$\sum y = 2180$	$\sum xy = 131613.7$	$\sum x^2 = 16903.65$	$\sum y^2 = 1089200$

Mean $(\bar{x}) = 57.62 \quad (\bar{y}) = 436$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.93$$

coefficient of determination (r^2) = 0.865

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.06$

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

Independent variable: EPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{ s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 19.78$$

$$a = \bar{y} - b.\bar{x} = -704$$

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

$= 82.87$

C. United Insurance Co. Ltd.

Year	EPS (X)	MPS (X)	XY	X^2	y^2
2005	18.62	127	2364.74	346.70	16129
2006	14.77	228	3367.56	218.15	51984
2007	14.80	190	2812.00	219.04	36100
2008	5.64	138	778.32	31.096	19044
2009	11.68	105	1226.4	136.42	11025
n=5	$\sum x = 65.52$	$\sum y = 788$	$\sum xy = 10549.02$	$\sum x^2 = 952.13$	$\sum y^2 = 134282$

Mean $(\bar{x}) = 13.10$ $(\bar{y}) = 157.6$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.23$$

coefficient of determination (r^2) = 0.0529

Standard error of correlation coefficient, $\text{S.E.(r)} = \frac{1-r^2}{\sqrt{n}} = 0.43$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.29$

Independent variable: EPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 2.384$$

$$a = \bar{y} - b.\bar{x} = 126.359$$

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

$= 56.45$

D. Himalayan General Insurance Co. Ltd.

Year	EPS (X)	MPS (X)	XY	X^2	y^2
2005	26.62	116	3087.92	708.62	13456
2006	30.30	285	8635.50	918.09	81225
2007	25.50	225	5737.50	650.25	50625
2008	38.41	190	7297.90	1475.33	36100
2009	39.86	165	6576.90	1588.82	27225
n=5	$\sum x = 160.69$	$\sum y = 981$	$\sum xy = 31335.72$	$\sum x^2 = 5341.11$	$\sum y^2 = 208631$

Mean $(\bar{x}) = 32.14$ $(\bar{y}) = 196.2$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = -0.11$$

coefficient of determination (r^2) = 0.0121

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.44$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.29$

Independent variable: EPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = -1.08$$

$$a = \bar{y} - b.\bar{x} = 231.032$$

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

$= 72.64$

E. Alliance Insurance Co. Ltd.

Year	EPS (X)	MPS (X)	XY	X^2	y^2
2005	8.06	180	1450.80	64.96	32400
2006	10.80	162	1749.60	116.64	26244
2007	14.81	115	1703.15	219.34	13225
2008	16.17	110	1778.7	261.47	12100
2009	4.00	131	524.00	16.00	17161
n=5	$\sum x = 53.24$	$\sum y = 698$	$\sum xy = 7206.25$	$\sum x^2 = 678.41$	$\sum y^2 = 101130$

Mean $(\bar{x}) = 10.77$ $(\bar{y}) = 139.6$

Coefficient of correlation,

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

coefficient of determination (r^2) = -0.51

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.26$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.223$

Independent variable: EPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = -1.38076$$

$$a = \bar{y} - b.\bar{x} = 116.44$$

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

$= 57.46$

F. Pooled Average

Year	EPS (X)	MPS (X)	XY	X^2	y^2
2005	31.55	244.60	7717.13	995.40	59829.16
2006	35.35	347.00	12266.45	1249.62	120409
2007	32.76	332.00	10876.32	1073.22	110224
2008	31.68	300.80	9504.00	1003.62	9080.64
2009	22.55	225.20	5078.26	508.50	50715.04
n=5	$\sum x = 153.89$	$\sum y = 1449.6$	$\sum xy = 45442.16$	$\sum x^2 = 4830.36$	$\sum y^2 = 431657.84$

Mean $(\bar{x}) = 3078$ $(\bar{y}) = 289.92$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.80$$

coefficient of determination (r^2) = 0.64

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.161$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.108$

Independent variable: EPS (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{ s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 8.79$$

$$a = \bar{y} - b.\bar{x} = 19.17$$

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

$= 66.57$

Appendix -4

Simple correlation and regression analysis between DPR and MPS

A. Nepal Insurance Co. Ltd.

Year	DPR (X)	MPS (X)	XY	X^2	y^2
2005	81.22	630	51168.60	6596.69	396900
2006	83.55	620	51801.00	6980.60	384400
2007	23.05	520	11986.00	531.30	270400
2008	27.45	456	12517.20	753.50	207936
2009	0.00	375	0.00		140625
n=5	$\sum x = 215.27$	$\sum y = 2601$	$\sum xy = 127472.80$	$\sum x^2 = 14862.10$	$\sum y^2 = 1400261$

Mean $(\bar{x}) = 43.27$ $(\bar{y}) = 520.20$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.95$$

coefficient of determination (r^2) = 0.902

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.044$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.023$

Independent variable: DPR (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 2.76$$

$a = \bar{y} - b.\bar{x} = 400.99$

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

$= 42.67$

B. Everest Insurance Co. Ltd.

Year	DPR (X)	MPS (X)	XY	X^2	y^2
2005	46.63	170	927.10	28900	2174.36
2006	32.76	440	14414.40	193600	1073.33
2007	30.67	610	18708.70	372100	940.65
2008	161.96	610	98795.60	372100	26231.04
2009	0.00	350	0.00	122500	
n=5	$\sum x = 272.02$	$\sum y = 2180$	$\sum xy = 139845.80$	$\sum x^2 = 1089200$	$\sum y^2 = 30419.37$

Mean $(\bar{x}) = 54.40$ $(\bar{y}) = 436$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.46$$

coefficient of determination (r^2) = 0.21

Standard error of correlation coefficient, $\text{S.E.(r)} = \frac{1-r^2}{\sqrt{n}} = 0.35$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.23$

Independent variable: DPR (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 1.36$$

$$a = \bar{y} - b.\bar{x} = 362.08$$

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

$= 191.20$

C. United Insurance Co. Ltd.

Year	DPR (X)	MPS (X)	XY	X^2	y^2
2005	50.68	127	6436.36	2568.46	16129
2006	51.11	228	11653.08	2812.23	51984
2007	44.61	190	8475.9	1990.05	36100
2008	66.91	138	9233.58	4476.95	19044
2009	0.00	105	0.00		11025
n=5	$\sum x = 213.31$	$\sum y = 788$	$\sum xy = 35798.92$	$\sum x^2 = 11647.69$	$\sum y^2 = 134282$

Mean $(\bar{x}) = 42.66$ $(\bar{y}) = 157.60$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.43$$

coefficient of determination (r^2) = 0.185

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.36$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.24$

Independent variable: DPR (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 0.856$$

$$a = \bar{y} - b.\bar{x} = 121.71$$

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

$= 50.76$

D. Himalayan General Insurance Co. Ltd.

Year	DPR (X)	MPS (X)	XY	X^2	y^2
2005	56.35	116	6536.6	3175.32	13456
2006	49.50	285	14107.50	2450.25	81225
2007	58.82	225	13234.50	3459.79	50625
2008	0.00	190	0.00	0.00	36100
2009	0.00	165	0.00	0.00	27225
n=5	$\sum x = 164.67$	$\sum y = 981$	$\sum xy = 33878.6$	$\sum x^2 = 9085.36$	$\sum y^2 = 208631$

Mean $(\bar{x}) = 32.93$ $(\bar{y}) = 196.20$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.204$$

coefficient of determination (r^2) = 0.042

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.43$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.29$

Independent variable: DPR (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 0.43$$

$a = \bar{y} - b.\bar{x} = 182.07$

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

$= 71.77$

E. Alliance Insurance Co. Ltd.

Year	DPR (X)	MPS (X)	XY	X^2	y^2
2005	62.199	180	11195.82	3868.72	32400
2006	46.42	162	7520.04	2154.82	26244
2007	47.26	115	5434.9	2233.51	13225
2008	0.00	110	0.00	0.00	12100
2009	0.00	131	0.00	0.00	17161
n=5	$\sum x = 155.88$	$\sum y = 698$	$\sum xy = 24150.76$	$\sum x^2 = 8257.04$	$\sum y^2 = 101130$

Mean $(\bar{x}) = 31.17$ $(\bar{y}) = 139.60$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.675$$

coefficient of determination (r^2) = 0.455

Standard error of correlation coefficient, $\text{S.E.(r)} = \frac{1-r^2}{\sqrt{n}} = 0.24$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.162$

Independent variable: DPR (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 0.70$$

$$a = \bar{y} - b.\bar{x} = 117.67$$

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

$= 26.39$

F. Pooled Average

Year	DPR (X)	MPS (X)	XY	X^2	y^2
2005	59.42	244.60	14534.13	3530.74	59829.16
2006	52.67	347.00	18276.49	2774.13	120409.00
2007	40.88	332.00	13572.16	1671.17	110224
2008	51.26	300.80	15419.008	2627.58	90480.64
2009	0.00	225.20	0.00	0.00	50715.04
n=5	$\sum x = 204.23$	$\sum y = 1449.60$	$\sum xy = 61801.79$	$\sum x^2 = 10603.62$	$\sum y^2 = 431657.34$

Mean $(\bar{x}) = 40.85$ $(\bar{y}) = 289.92$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.51$$

coefficient of determination (r^2) = 0.26

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.33$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.22$

Independent variable: DPR (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 1.145$$

$$a = \bar{y} - b.\bar{x} = 243.12$$

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

$= 53.13$

Appendix -5

Simple correlation and regression analysis between DY and MPS

A. Nepal Insurance Co. Ltd.

Year	DY (X)	MPS (X)	XY	X^2	y^2
2005	7.94	6.30	5002.2	63.04	396900
2006	9.65	620	5983	93.12	384400
2007	1.93	520	1003.6	3.72	270400
2008	2.19	456	998.64	4.79	207936
2009	0.00	375	0.00	0.00	140625
n=5	$\sum x = 21.71$	$\sum y = 2601$	$\sum xy = 12987.44$	$\sum x^2 = 164.67$	$\sum y^2 = 1400261$

Mean $(\bar{x}) = 4.34$ $(\bar{y}) = 520.20$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.929$$

coefficient of determination (r^2) = 0.86

Standard error of correlation coefficient, $S.E.(r) = \frac{1-r^2}{\sqrt{n}} = 0.063$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.042$

Independent variable: DY (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{ s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 24.058$$

$$a = \bar{y} - b.\bar{x} = 415.73$$

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

$= 46.53$

B. Everest Insurance Co. Ltd.

Year	DY (X)	MPS (X)	XY	X^2	y^2
2005	4.76	170	809.20	22.65	28900
2006	4.55	440	2002.00	20.70	198600
2007	3.28	610	2000.80	10.75	372100
2008	16.39	610	9997.90	268.63	372100
2009	0.00	350	0.00		122500
n=5	$\sum x = 28.98$	$\sum y = 2180$	$\sum xy = 14809.90$	$\sum x^2 = 322.73$	$\sum y^2 = 1089200$

Mean $(\bar{x}) = 5.796$ $(\bar{y}) = 436$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.47$$

coefficient of determination (r^2) = 0.22

Standard error of correlation coefficient, $\text{S.E.(r)} = \frac{1-r^2}{\sqrt{n}} = 0.35$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.24$

Independent variable: DY (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, $y = a + bx$

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{ s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 14.05$$

$$a = \bar{y} - b.\bar{x} = 354.55$$

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

$= 194.47$

C. United Insurance Co. Ltd.

Year	DY (X)	MPS (X)	XY	X^2	y^2
2005	4.10	127	520.70	16.81	16129
2006	3.30	228	752.40	10.89	51984
2007	3.47	190	659.3	12.04	36100
2008	2.73	138	376.74	7.45	19044
2009	0.00	105	0.00	0.00	11025
n=5	$\sum x = 13.6$	$\sum y = 788$	$\sum xy = 2309.14$	$\sum x^2 = 47.19$	$\sum y^2 = 134282$

Mean $(\bar{x}) = 2.72$ $(\bar{y}) = 157.6$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.52$$

coefficient of determination (r^2) = 0.27

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.33$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.22$

Independent variable: DY (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 16.25$

$a = \bar{y} - b.\bar{x} = 113.38$

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

$= 49.71$

D. Himalayan General Insurance Co. Ltd.

Year	DY (X)	MPS (X)	XY	X^2	y^2
2005	6.41	116	743.56	41.088	13456
2006	5.26	285	1499.1	27.67	81225
2007	6.67	225	1500.75	44.49	50625
2008	0.00	190	0.00	0.00	36100
2009	0.00	165	0.00	0.00	27225
n=5	$\sum x = 18.34$	$\sum y = 981$	$\sum xy = 3743.41$	$\sum x^2 = 113.24$	$\sum y^2 = 208631$

Mean $(\bar{x}) = 3.67$ $(\bar{y}) = 196.2$

Coefficient of correlation,

$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.168$

coefficient of determination (r^2) = 0.028

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.43$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.29$

Independent variable: DY (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$\sum y = n.a + b.\sum x$ s

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

Solving there two normal equations we get;

$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 3.16$

$a = \bar{y} - b.\bar{x} = 184.62$

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

$= 72.31$

E. Alliance Insurance Co. Ltd.

Year	DY (X)	MPS (X)	XY	X^2	y^2
2005	2.78	180	500.40	7.73	32400
2006	3.09	162	500.58	9.53	26244
2007	6.09	115	700.35	37.08	13225
2008	0.00	110	0.00	0.00	12100
2009	0.00	131	0.00	0.00	17161
n=5	$\sum x = 11.96$	$\sum y = 698$	$\sum xy = 1701.33$	$\sum x^2 = 54.36$	$\sum y^2 = 101130$

Mean $(\bar{x}) = 2.39$ $(\bar{y}) = 139.60$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.103$$

Coefficient of determination (r^2) = 0.0106

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.44$

Probable error of correlation coefficient, $P.E.(r) = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.30$

Independent variable: DY (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x \text{ s}$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 1.23$$

$$a = \bar{y} - b.\bar{x} = 136.65$$

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

$= 34.91$

F. Pooled Average

Year	DY (X)	MPS (X)	XY	X^2	y^2
2005	5.198	244.60	1271.43	27.02	59829.16
2006	5.17	347.00	1793.99	26.73	120409.00
2007	4.29	332.00	1424.28	18.40	110224.00
2008	4.26	300.80	1281.41	18.15	90480.64
2009	0.00	225.20	0.00	0.00	50715.04
n=5	$\sum x = 18.91$	$\sum y = 1449.60$	$\sum xy = 5771.12$	$\sum x^2 = 90.30$	$\sum y^2 = 431657.84$

Mean $(\bar{x}) = 3.78$ $(\bar{y}) = 289.92$

Coefficient of correlation,

$$r = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\sqrt{n\sum y^2 - (\sum y)^2}} = 0.62$$

Coefficient of determination (r^2) = 0.38

Standard error of correlation coefficient, $\text{S.E.}(r) = \frac{1-r^2}{\sqrt{n}} = 0.27$

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

Independent variable: DY (Say x)

Dependent variable: MPS (Say y)

Regression equation of y on x is, y = a + bx

Where,

a = Regression constant

b = Regression coefficient (slope of regression line)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by;

$$\sum y = n.a + b.\sum x$$

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

Solving there two normal equations we get;

$$b = \frac{n.\sum xy - \sum x.\sum y}{n.\sum x^2 - (\sum x)^2} = 15.37$$

$$a = \bar{y} - b.\bar{x} = 231.781$$

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

$= 48.19$

Appendix -6

Multiple regression analysis of MPS on EPS and DPS

Year	MPS (X_1)	EPS (X_2)	DPS (X_3)	X_1^2	X_2^2	X_3^2	X_1X_2
2005	244.60	31.55	19.89	59829.16	995.40	395.61	7717.13
2006	347.00	35.35	19.51	120409	1249.62	380.64	12266.45
2007	332.00	32.76	11.73	110224	1073.23	137.59	10876.32
2008	300.80	31.68	22.75	90480.64	1003.62	517.56	9529.34
2009	225.20	22.55	0.00	50715.04	508.50	0.00	5078.26
n=5	$\sum x_1 =$ 1449.6	$\sum x_2 =$ 153.89	$\sum x_3 =$ 73.88	$\sum x_1^2 =$ 43165.84	$\sum x^2 =$ 4830.37	$\sum x_3^2 =$ 1431.40	$\sum x_1x_2 =$ 45467.50

$Mean\ \overline{X_1}\quad \overline{X_2}\quad \overline{X_3} = 14.77$

= 289.92

= 30.77

Dependent variable : MPS (Say X_1)
Independent variable (Predictor) : EPS (Say X_2) and DPS (Say X_3)

The general form of multiple regression equation application in given case is:
$X_1 = a_1 + b_1.x_2 = b_2.x_3$
Where, a = Regression constant,
b_1 and b_2 = Coefficient of net regression (or simply, regression constants)
Required normal equations to find the value of a_1, b_1 and b_2 can be written as:

$$\sum x_1 = n.a_1. + b1\sum x_2 + b_2\sum x_3 - - - - - - - - - - - - - - - - - - - (i)$$

$$\sum x_1x_2 = a_1\sum x_2 + b_1\sum x_2^{\ 2} + b_2\sum x_2.x_3 - - - - - - - - - - - - - - - (ii)$$

$$\sum x_1x_3 = a_1\sum x_3 + b_1\sum x_2x_3 + b_2\sum x_3^{\ 2} - - - - - - - - - - - - - - - (iii)$$

Substituting the corresponding values and solving these equations for a_1, b_1 and b_2, we get,
a_1 = -144.492
b_1 = 14.92
b_2 = -3.71
Hence, the required multiple regression equation is as follows:
$\overline{X_1}$ = -144.492 + 14.92x_2 -3.71x_3

Standard error of estimate of x_1 on x_2 and x_3 is given by,

$$S1.23 = \sqrt{\frac{\sum x_1^{\,2} - a\sum x_1 - b_1\sum x_1x_2 - b_2\sum x_1x_3}{n-3}}$$

$$= \sqrt{\frac{431657.84 + 114.492 \times 1449.6 - 45467.50 + 3.71 \times 22372.62}{5.3}}$$

$$= \sqrt{2252.76}$$

$$= 47.4632$$

Appendix -7

Coefficient of multiple determination among f MPS on EPS and DPS (of pooled average)

Year	MPS (X_1)	EPS (X_2)	DPS (X_3)	$(X_1 - \overline{X}_1)^2$	$\hat{X}_1$	$\hat{X}_1 - \overline{X_1}$	$(\hat{X}_1 - \overline{X_1})^2$	$X_1 - \hat{X}_1$
2005	244.60	31.55	19.89	2053.90	282.44	-7.48	55.95	-37.84
2006	347.00	35.35	19.51	3258.13	340.55	50.63	2563.39	6.45
2007	332.00	32.76	11.73	1770.73	330.76	40.84	1667.90	1.24
2008	300.80	31.68	22.75	118.37	273.77	-1615	260.82	27.8
2009	225.20	22.55	0.00	4188.67	221.95	-67.97	4619.92	3.25
	$\sum x_1 =$ 1449.6	$\sum x_2 =$ 153.89	$\sum x_3 =$ 73.88	$\sum(x_1 - \bar{x}_1)^2 =$ 11389.80			$\sum(\hat{x}_1 - \bar{x}_1)^2 =$ 9168.10	

$Mean\ \overline{X}_1 = 289.92\ \ \overline{X}_2 = 30.77\ \overline{X}_3 = 14.77$

$\therefore$ Total variation = Total sum of square

= SST

$= \sum(x_1 - \bar{x}_1)^2 = 11389.8$

Explained variation = Regression sum of square,

= SSR

$= \sum(\hat{x}_1 - \bar{x}_1)^2 = 9168.10$

and,

Unexplained variation (error) = $\sum(x_1 - \hat{x}_1)^2 = 2216.25$

The coefficient of multiple determination is given by,

$$R^2_1.23 = \frac{Explained\ Variation}{Total\ Variation}$$

$$= \frac{SSR}{SST}$$

$$= \frac{9167.98}{11459.80}$$

= 0.80

Unexplained variation (SSE) = 2216.25

Appendix -8

Test of regression coefficient of multiple regression model (of pooled average)

ANOVA Table

Sources of variation	Sum of square (SS)	Degree of freedom	Mean sum of squares (M.S.)
Explained Regression	SSR = 9168.10	K-1 = 3-1=2	MSR = SSR/k-1= 4584.05
	SSE = 2216.25	n-k =5-3 =2	MSE = SSE/n-k = 1108.125
Total	SST = 11384.35	n-1 = 5-1 =4	

Appendix -9

Multiple regression analysis of MPS on P/E ratio (times) and DPS (of pooled average)

Year	MPS (X_1)	E/E ratio(X_2)	DPS (X_3)	X_1^2	X_2^2	X_3^2	$X_1.X_2$	$X_1.X_3$
2005	244.60	9.34	19.89	59829.16	87.23	395.61	2284.56	4865.09
2006	347.00	11.48	19.51	120409.00	131.79	380.64	3983.56	6769.97
2007	332.00	10.04	11.73	110224.00	100.80	137.59	3333.28	3894.36
2008	300.80	11.72	22.75	90480.64	137.36	517.56	3525.37	6843.20
2009	225.20	10.39	0.00	65127.04	107.95	-	2339.828	-
n=5	$\sum x_1$ = 1449.6	$\sum x_2$ = 295.77	$\sum x_3$ = 73.88	$\sum x_1^2$ = 446069.84	$\sum x_2^2$ = 565.13	$\sum x_3^2$ = 1431.4	$\sum X_1.X_2$ = 615466.16	$\sum x_1.x_3$ = 22372.62

Mean $\overline{X_1} = 289.92$, $\overline{X_2} = 40.846$, $\overline{X_3} = 14.77$

Dependent variable : MPS (Say X_1)

Independent variable (predictor) : P/E ratio (Say X_2) and DPS (Say X_3)

The general from of multiple regression equation applicable in given case is:

$x_1 = a_1 + b_1.x_2 + b_2.x_3$----------(i)

Where, a = Regression constant

b_1 and b_2 = Coefficient of net regression (or simply, regression constants)

Required normal equations to find the values of a_1, b_1 and b_2 can be written as under.

$$\sum x_1 = n.a_1. + b1\sum x_2 + b_2 \sum x_3 \quad ----------(i)$$

$$\sum x_1 x_2 = a_1 \sum x_2 + b_1 \sum x_2^{\,2} + b_2 \sum x_2.x_3 \quad ----------(ii)$$

$$\sum x_1 x_3 = a_1 \sum x_3 + b_1 \sum x_2 x_3 + b_2 \sum x_3^{\,2} \quad ----------(iii)$$

Substituting the corresponding values and solving these equations for a_1, b_1 and b_2, we get,

$a_1 = 30.176$

$b_1 = 21.62$

$b_2 = 2.076$

Hence, the required multiple regression equation is as follows:

$\hat{X}_1 = a_1 + b_1.x_2 + b_2.x_3$

$= 30.176+21.62x_2+2.076x_3$

The standard error of estimate of x_1 on x_2 and x_3 is given by,

$$S1.23 = \sqrt{\frac{\sum x_1^{\,2} - a_1 \sum x_1 - b_1 \sum x_1 x_2 - b_2 \sum x_1 x_3}{n-3}}$$

$$= \sqrt{\frac{431657.84 - 278.56 \times 1449.6 - 0.1874 \times 86158.21 - 0.01828 \times 22372.62}{5-3}}$$

$= 75.174$

Appendix -10

Coefficient of multiple determination among MPS, EPS and P/E ratio (of pooled average)

Year	MPS (X_1)	P/E (X_2)	DPS (X_3)	$(x_1 - \bar{x}_1)^2$	$\hat{x}_1$	$(\hat{x}_1 - \bar{x}_1)^2$
2005	244.60	9.34	19.89	2053.90	273.39	272.97
2006	347.00	11.48	19.51	3258.12	318.80	838.44
2007	332.00	10.04	11.73	1770.72	271.60	335.98
2008	300.80	11.72	22.75	118.37	330.78	1670.35
2009	225.20	10.9	0.00	4188.68	254.81	1232.71
n=5	$\sum x_1 =$ 1449.60	$\sum x_2 =$ 52.97	$\sum x_3 =$ 73.88	$\sum (x_1 - \bar{x}_1)^2 =$ 11389.80		$\sum (\hat{x}_1 - \bar{x}_1)^2 =$ 4350.48

$Mean\ \overline{X_1} = 289.92\ \ \overline{X}_2 = 10.59\ \overline{X_3} = 14.78$

$\therefore$ Total variation = Total sum of square

= SST

$= \sum(x_1 - \bar{x}_1)^2 = 11389.80$

Explained variation = Regression sum of square,

= SSR

$= \sum(\hat{x}_1 - \bar{x}_1)^2 = 4350.48$

and,

Unexplained variation (error) = SSE

$= \sum(x_1 - \hat{x}_1)^2 = 7042.71$

Total coefficient of multiple determination is given by,

$R^2 1.23 = \dfrac{Explained\ Variation}{Total\ Variation}$

$= \dfrac{SSR}{SST}$

$= \dfrac{4350.48}{11389.80}$ = 0.3819

Appendix -11

Test of regression coefficient of multiple regression model (of pooled average)

ANOVA Table

Sources of variation	Sum of square (SS)	Degree of freedom	Mean sum of squares (M.S.)
Explained (regression)	SSR = 4350.48	K-1 = 3-1=2	MSR = SSR/k-1= 2175.24
Unexplained (error)	SSE = 7042.71	n-k =5-3 =2	MSE = SSE/n-k = 3521.35
Total	SST = 11393.19	n-1=4	

Curriculum Vitae

PARVATHI KUMARI SHARMA

Butwal

Personal Details

Father's Name : M.LAL SHARMA/SAPKOTA
Date of Birth : 10th sept 1980
Sex : Female
Nationality : Nepali
Marital Status : Married
Languages : English, Nepali,Hindi and Telugu (Read,Write,Speak)

Academic Background

Level	Passed Year	Institute	Percentage	Major Subject
MBS	2004	Lumbini Banijya Campus, Butwal (T.U.)	Thesis not submitted	Finance
BBS	2001	Gov. Degree College for Women (Osmania University) A.P (India)	62	Marketing,Advertising
I. Com.	1998	Gautami Junior College for Girls A.P. India	72	Account,Eco
SLC	1995	SLC Board of India	60	Math, Geography

Work Experience

- ***Accountant (Account Posting / Reporting & Many more)***
  2007 April to Till Date

  SAME C.S.B.T. Nepal Pvt. Ltd. Butwal (Distributor of SAME Brand Tractors)
- ***Lecture In Account***
  2005 Oct. to 2007 April
  Account in +2 - Welhams Higher Secondary School
- ***Teacher in English,HPE,Computer & Account***
  for Secondary Level -Welhams Higher Secondary School
  2005 to 2007
- ***Hostel Warden***
  2006 to 2007
  Welhams Higher Secondary School

Description of Duties

- *Vouchering, Bank reconciliation, Branch reconciliation, Debtor reconciliation, Computer posting, out station visit, Finance Management (Reporting, Preparing Loan Schedules & maintaining details of customers)*

Training

- *E-DAST- Diploma in Advanced Software TEch.*
  CMC Aandrapradesh India.
- *Shorthand Lower.*

Typewriting English Lower + Higher

Mailing Address

Parvathi Pokhrel
Butwal 14 ,Rupandehi , Nepal.
Telephone- 0715438756
Mobile: 9814401480,9847128769
Email: iswari2006@gmail.com