CHAPTER I

INTRODUCTION

1.1 Back ground of the study:

Financial management is mainly concerned with the process, institutions, markets, and instructions involved in the transfer of money among and between individuals businesses and governments the key finance functions are the investment, financing, and dividend decisions for an organization. Funds are raised from external financial sources and allocated for different uses.

It is also concerned with the acquisition and investment of fund in the productive sectors for the purpose of enhancing wealth. Investment requires collection of necessary funds and utilization of those funds towards productive sectors Healthy economy is dependent on efficient transfer of funds from people who are net savers to firms and individuals who need capital. Economic efficiency is impossible without a good system for allocating capital within the economy. Nepal has predominantly a subsistent agricultural economy, which contributes about 40 percent of GDP and provides employment to more than 80 percent of the economically active population. The economy of the nation is strictly based on the proper and efficiency utilization of available natural resources with well planned management, strategy and up to data information. The utilization of resources results in appreciation of the wealth of individual and the nation. Investment is sacrifice of fund at present for future return. It is the employment of fund with the aim of achieving additional income. It is long-term commitment and expectation of generating additional money in future or waiting for reward. Every investment entails some degree of risk. It requires a present certain sacrifice for a future uncertain benefit.

An investment is the commitment of money that is expected to generate additional money investment is the sacrifice of existing resources to generate return in the future involving risk Insurance was development to reduce those risks. Insurance has proved itself as an effective device that could be a safeguard against such uncertainties and unfortunate happenings. Insurance may be viewed as a co-operative device to spread the loss caused by a particular risk over a number of persons who are exposed to it and who agree to ensure themselves against that risk. Insurance companies occupy an important place in the framework of every economy by providing required capital for the development of industry trade and business out of the premium collection as deposits, besides this Insurance companies are the essential part of the business activities which are established to safeguard people life, wealth, property, health and minimizes future uncertainties The insurance has proved as double-edged weapon for socio-economic development of the nation. In one way it provides financial security against the uncertainties to the person, industry, commerce and other assets. In the other way insurance business collects the scattered financial resources and injects the bulk amount of money in the productive sector, which helps for the growth of industrialization and commercialization. The proper development of the industrialization and commercialization make the better economic standard of the company

Insurance market in global perspective has been as important ingredient for economic development. In advance, countries insurance companies have played a very significant intermediary's role is mobilizing funds through the prudential combination of investment

portfolio. However, in developing countries like Nepal, the role of insurance companies is still to be realized as an important vehicle of mobilizing the internal saving through various insurance schemes of life and non-life sectors in the economy Risk management is another important function of any organization that has to carry out. The country is facing difficult political and economic situation, it has greater impact on the corporate organization. Here an attempt has been made to review the comparative risk return and portfolio performance measure of common stock of insurance in the present scenario of the country.

1.1.1 Components of investment:

An investment is a commitment of funds made in the expectation of some positive rate of returns commensurate with the risk; the investor assumes investment is the exploitation of opportunities by transferring funds from surplus to needed sectors through the Transaction of financial instruments. Investors usually lack any idea of risk and return because most of the investors appear to be least familiar with the financial market. They can make wrong investment decisions based on the hunches rather than on real term analysis. Though some investors follow the rational investment procedure and portfolio analysis but they still lack perfect awareness about the risk and return factors without getting theoretical knowledge about risk associated with investment, most of the investors are making investment on the stocks. This may be termed as improper practice. This situation motivates the present researcher to undertake a research project entitled "Risk Return and port folio performance measure analysis".

Return, Risk and Time are the important components of the investment **R**eturn is the reward obtained in the future for risking the investment at present. It involves both capital gain and losses by change in security market price. **R**isk is the present in every alternatives of investment. Uncertainty in return from investment is called risk. Always investment is process is full of both risk and return possibilities. According to the size and nature of investment portion of risk and return varies. **T**ime is another important factor for investment, which offers different course of action. Time factor is utilized by investor using buy and hold policy. Investment gets return only in course of time so time influence directly for return as risk.

Hence risk and return are so interrelated that they are inseparable from each other. Therefore, the investors analyze and select their investment option, which is also called portfolio after analysis of risk and return

1.1.2 Procedure of investment:

The procedure of investment describes how an investor makes decisions about what securities to invest in, how extensive these investments should be, and when they should be made. The investment process involve the five steps i.e. policy, analysis, construction of portfolio, return and evaluation. (PACRE).

Setting investment policy: This step involves the identification of the potential categories of the financial assets for consideration in the ultimate portfolio. This identification will be based on the investment objectives, amount of investible wealth, and tax status of the investor.

Perform security analysis:
There are two main approaches to security analysis i.e. technical analysis and fundamental analysis. The technical analysis involves the study of stock market prices in an attempt to predict future price movements for the common stock of the particular firm. First, past prices are examined in order to identify recurring trends or pattern in price movement then more recent stock prices are analyzed in order to identify emerging trends or patterns that are similar to the past one.

Fundamental analysis begins with the intrinsic value of any financial assets equals the present value of all cash flow that the owner of the assets expects to receive. Once the intrinsic value of the common stock of a particular firm has been determined, it is compared with securities current market price of the common stock in the following ways:
If $V_{i,t} > P_{i,t}$ then purchase the security.
If $V_{i,t} < P_{i,t}$ then sell or short sell* the security
If $V_{i,t} = P_{i,t}$ then do not trade the security

Portfolio Construction: The third step of the investment process is construction of portfolio. Construction of portfolio involves identification of specific securities in which to invest, along with the proportion of investable wealth to be put into each security. Here, selectivity, timing and diversification need to be addressed by the investors.

Portfolio Revision: The fourth step of investment process, portfolio revision, which involves both, realizing that the currently held portfolio is not optimal and specifying another portfolio to hold with superior risk-return characteristics. The investor must balance the costs of moving to the new portfolio against the benefits of revision.

Portfolio Performance Evaluation: The fifth step in the investment process, portfolio performance evaluation, involves determining of the actual performance of a portfolio in terms of risk and compares the performance with that of an appropriate "benchmark" portfolio.

1.1.3 Companies of insurance and function:
Insurance may be defined as a system of combining many loss exposures, with the costs of the losses being shared by all of the participants.
The function of insurance is to spread the loss over a large number of persons who are agreed to co-operate each other at the time of loss. The risk cannot be averted but loss occurring due to certain risk can be distributed amongst the agreed persons.
Thus, the insurance is a compensation for uncertain happening of any loss which is insured for certain which is insured for certain period of time and for specific amount; human life and property are subject to the risk of loss or damage from the various sources. The basic concept of insurance is a method of financial loss of a few from a common fund out of contribution of many who are equally exposed to the same loss.
Insurance can be classified in two type based on different point of views:
They are
1. Business point of view and,

2. Risk point of view

1. Business point of view:
Insurance can be further classified into the following categories on the basis of business point of view.

Life Insurance:
The insurance which is made against the risk, related to the human life is life insurance. It is a method by which a group of people may cooperate to ease the loss resulting from the premature death of members of the group. There are two parties in a life insurance contract. One of them is insurer and another id insured. The insurer promises to pay a fixed sum to the insured if he alive and obtain a particular age or to the nominee in case of his dying earlier. The promise is made in consideration of some price called premium, which may be paid in human in a number of installment. A contract where by the insurer in consideration of a premium paid by the insured promises to pay a stipulated sum to the later if surviving at the end of a specified period or to his nominee in the event of his death earlier than the period. Life insurance is a cooperative risk-sharing plan whereby large number of people can set aside a portion of their earning to provide funds against the hazards of loss of income either by death, disability or retirement. There is an assumption by an insuring organization of a risk of death of a policyholder. In other word, the contract made by a person with the life company with a view to get financial protection from the life related risk is known as life insurance. Life Insurance is the contract, which the insurer undertakes the responsibility to pay sum of money either on death of insured or on the expiry of fixed period in consideration of premium In Nepal there are nine life insurance companies including composite insurance i.e. Rastriya Beema Sansthan in operation: To regulate the insurance business in Nepal, the insurance act of 2049 has been made in Nepal. It has defined life insurance as "The contract of insurance affected on human life on the basis of age to pay a fixed sum to the assured or his nominee on death or on the happening of any contingency dependent to human life in consideration of payment of a fixed installment premium by the assured. We can see following policy of life insurance provided by insures according to insured interest and desired in Nepal:-

- Whole life insurance policy
- Term life insurance policy
- Endowment life insurance policy

Whole Life Insurance Policy: Whole life insurance policies promise to pay the beneficiary whenever death occurs. "Till death does us part "is the insurer's promise. In addition, whole life policies promise to pay the insured in the event that the insured reaches 100. When an insurer must make a claim payment, the policy is said to have matured. The insurer knows for a certainty that it must eventually pay a claim on every whole life policy that remains in force.

Term Life Insurance Policy: Term life insurance policy for a short period of years ranging from 3-month to7years. Sum assured is payable only in the event of death of the life assured occurring during the period. However, the assurance comes in to end, should the life assured survive. The selected term premiums are usually payable throughout the term of the policy or until the prior death of the life assured .Term insurance policy or till the

prior death of life assured. Term life insurance is the cheapest policy .The term insurance policies are useful to those:

- Who need extra –protection for a short duration or
- Who need protection for long duration but are unable to purchase for the time-being due to ill-death or lesser income,
- A young businessman can take the policy to save the business –disaster during initial stage of the business,
- A mortgagor of the property may be benefited by this scheme,
- A father can take this policy during the period of education of his child, and
- Any such persons who are willing to provide insurance for a shorter period.

Endowment Life Insurance Policy: An endowment life insurance policy creates two rights for the insured. The first is to have beneficiary paid if the insured dies before the policy matures or "endows." The second is for the insured to collect the endowment if he or she is alive when the policy matures .An endowment period may be chosen to endow at a specified age. Thus, one may purchase a 10-15 or 20-years endowment or one may purchase an endowment to age 60-65. The general rule is that the shorter the endowment period, the higher the premium for a given amount of insurance.

General Insurance (Non –Life Insurance):

Insurance other than life insurance is called general insurance or non- life insurance. It is pure insurance because it can measure any risk in term of money. General insurance is the insurance of property and liabilities risk of insured against some specified cost is known is premium. General insurance responsible to payment of an amount to insured. But when the ancient is held by negligent of insured where the insurer does not responsible to pay any amount against the risk, damage or loss of property. Insurer and insured may agreed to accept every kind of risk under the contract and risk transfer through the assurance. But " The coverage written by the property and labiality insurance insurers may be divided into five types:-Physical damage or loss, loss of income and extra expenses resulting from physical damage to property, liability, health and security." There are sixteen non-life insurance in operation in Nepal. Insurance Board of Nepal has classified general insurance business in six major sectors. They are Marine insurance, Fire insurance, Motor insurance, Aviation insurance, Engineering insurance and miscellaneous insurance.

Marine Insurance: Marine insurance is the oldest form of modern insurance. "Marine insurance is a contract whereby the insurance undertakes to indemnify the assured in the manner and the extent thereby agreed, against marine losses, the losses incidental to a marine adventure." i.e. on the happening of a marine peril. The marine insurance policy provides the protection against inland transit loss, which is arising on the way to seller and buyer and protection against loading and unloading also. There are cargo insurance, freight insurance and liability insurance that are concerned with the destruction of ship, cargo, freight, accidental etc.

Fire Insurance: "The basic intension of the fire policy is to provide compensation to the insured person on the event of there being damage to the property insured Fire insurance came into existence only after the Great Fire of London in 1066 A.D. Fire destroyed many houses and other properties in London in 1066 A.D. People felt the necessary of protection against the calamities of fire. Fire insurance policy is for the protection against

loss of properties from fire. It is a contract on which two parties agree to insure the property and the other party accepts the risk of fire and subject to payment of loss in case of fire. Also the field of fire insurance can be modified or extended to include a number of perils closely allied to fire like wind, stor5m, earthquake, riot and strike, damage, terrorism, explosion, landslide etc.

Motor Insurance: The rate of premium is standardized in Nepal because the business is based on prescribed tariff by the insurance board. No insurer can charge lower rates than the tariff rates and no insurance can grant benefits exceeding than those arranged by tariff. Vehicles are classified by motor tariff in three categories i.e. private cars, commercial vehicles and two wheelers.

Aviation Insurance: Aviation insurance is the insurance of aircraft and related aircraft activities. One aspect of aviation insurance is Aircraft Hull. Another aircraft is aircraft operation carrying passenger that may incur public liability for which Aircraft liability insurance is required. Airports can also incur liability; this is termed Airport Owners and Operations Liability insurance.

Engineering Insurance: Contractor's All Risk insurance covers for civil works like building and marine works like bridges, dams, sea walls etc. It also covers plant and machinery used for *construction as* well as temporary structure set up to support the construction .It further covers for natural calamines , third party liability and covers for entire period of construction that may spread over a numbers of years.

Miscellaneous Insurance: Miscellaneous insurance policy covers the vast categories of insurance policy. However, this practically important policy cannot be neglects. "A number of coverage's written by casually insurance are available that cannot be classified neatly as liability auto or crime insurance but nevertheless are important to those with the exposure that these forms are designed to project. They are discussed under the heading of 'Miscellaneous Coverage' and are written by property and liability insurance." Miscellaneous insurance policy includes following insurance policy;

Fidelity Guarantee Insurance Policy: We know that honesty is the best policy. The word stays at the forth and trust. But fidelity guarantee insurance covers the loss arising due to fraud and dishonesty of the employees or third party. The insurer fulfill the loss occurred due to the discard of the fidelity of the beloved person and loan association and other business in which employee have excess to large sum of money in variably carry fidelity bonds for protections. It is further sub divided into fiduciary insurance, credit insurance, and privilege insurance.

Workmen Compensation Insurance Policy: Worker's compensation insurance policy protects on employer against legal liability. It is also a means of motivation to the workers because an organization gives the indemnity to the worker if they get occupation accident. In this policy the insurer provides financial support for medicine, surgical and hospitably requirement as determinants as determined by the compensation law of state, if the worker meets with the accident within the working place and time.

Others: There are plenty of policies except above as Medical Insurance , Accidental Insurance, Burglary Insurance , Money in transit Insurance ,Machinery Breakdown Insurance, Household Insurance, Cattle Insurance, Crop Insurance ,Boiler Insurance, Credit Insurance, Terrorism Insurance etc.

2. Risk Point of View:

The insurance can be categories into following ways from the risk point of view:

Personal Insurance: Under personal insurance, the insurance is made to the subject related to the person's life. There is possibility of risk associated to death, accident and diseases,. The insurance, which is effected against such risks, with the objectives of getting financial protection, is called personal insurance. Life insurance, personal accidental insurance and health insurance etc. are the example of personal insurance.

Property Insurance: Under this insurance, insurance of the different nature property is affected to compensate the property damaged or loss. The insurance company gives the compensation to the assured. The insurance company gives only actual compensation to an insured on the basis of fact and event. The examples of property insurance are fire, marine, crops, cattle, and burglary insurance etc.

Liability Insurance: Under this insurance, compensation is given to third person for loss or damage caused by negligence, or other reason, of the party. The examples of liability insurance are motor insurance, public liability insurance etc.

Guarantee Insurance: Under this insurance, the insurance company gives the guarantee of faithfulness or the honesty of any employee or any other person and it accepts the liability compensation on financial loss to the insured with the cause of dishonesty and fraud. The examples of guarantee insurance are credit right, fidelity, guarantee insurance etc.

There are following importance and function of insurance company.

a) Insurance provides security and safety:

The insurance provides safety and security against the loss on a particular event. In case of life insurance payment is made when death occurs or the term of insurance is expired. The insurance provides safety and security against the loss of earning after death or in old age, against the loss by fire, by damage and theft of any valuable property.

b) Insurance affords peace of mind:

The security avoids the fear and uncertainty about future by different reasons. Without insurance people may be frustrate or weaken by future possibilities. Therefore, insurance help to be fresh and out of any tension about their future.

c) Insurance protects mortgaged property:
When the owner of the mortgaged property is dead, the property is taken over by the lender of money and the family will be deprived of the uses of the property. Insurance is the solution for this problem .Mortgagee also wishes to get the property insured because at the damage or destruction of the property he will lose his right to get the loan repaid.

d) Insurance eliminates dependency:
At the death of husband or father, the destruction of family need no elaboration .Similarly, the destruction of property and goods the family would suffer a lot living standard of the family would be low and suffering may to any extent of begging from the relatives, neighbors or friends. The insurance is here to assist them and provide adequate amount at the time of suffering.

e) Insurance encourages for saving:
Life insurance encourage saving .Once the person is life insured, he has to pay certain premium for the specified period .Systematic saving is possible because regular premiums are required to be compulsorily paid.

f) Uncertainty of business losses is reduced:
In a business, with a slight negligence, the property may be turned into ashes. The accident may be fatal not only to the individual or property but to the third party also. New construction and establishment are possible only with the help of insurance. Without insurance, uncertainty will be to the maximum level and nobody would like to invest a huge amount in the business or industry. So, insurance play important role in the development of business and its activities.

g) Increment of Business- efficiency:
Insurance make the owner free from future losses. This helps them to devote much time and effort to the business .As business man devotes much time to the business, business efficiency is increased.

h) Enhancement of credit:
The business can obtain loan by pledging the policy as collateral for the loan .The insured person are getting more loans due to certainty of payment at their death. So, insurance is very much useful to business.

i) Welfare of employee:
The employer has to look after the welfare of employee which can be provision for early death, provision for disability and provision for old age. Their requirements are easily met by the life insurance, accident and sickness benefit and pension which are generally provided by group insurance.

j) Protection of the wealth of the society:
The loss of a particular wealth can be protected with the insurance. Life insurance provides loss of human wealth. The loss of damage of property at fire, accident etc can be

well indemnified by the property insurance, cattle, crop and machines are also protected against their accidental and economic losses. With the advancement of the society, new types of insurance programs and policies are developed and people feel happy and secure in the society.

k) Economic growth of the country:
Development of insurance in the country is the sign of economic growth of the country. Insurance provides strong hand and mind for the economic growth. As the protection is given by the insurance, it stimulates more production in agriculture, in industry, factory premises, and machines. It provides more confidence to start and operate the industry.

c) Reduction in Inflation:
The insurance reduces the inflation in two ways. First, by extracting money in supply to the amount of premium collected and secondly, by providing sufficient funds for product narrow down the inflationary gap.

1.1.4 Portfolio and its management:

A portfolio is usually defined as a combination of assets. It is a collection of securities. Portfolio means the lists of holding in securities owned by an investor or institution. A portfolio is a collection of investment securities. Example, if you hold some stocks of Nepal Investment Bank Ltd., some of Bottlers Nepal Co., some of Radisson Hotel and some of Standard Chartered Bank Ltd. The investment portfolio consists of the stocks of these four different companies. Portfolios analysis considers the determination of future risk; and return is a weighted average of the expected return of the individual securities. Portfolio theory deals with the selection of optimal portfolio i.e. The portfolio that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return. Portfolio theory has been developed for the financial assets. Thus making investment from the selected optimal portfolio i.e. the portfolio that provides the highest rate of return with least possible amount of risk is the real investment portfolio. "A portfolio simply represents the practice among the investors of having their funds in more than one asset. The combination of investment assets is called a portfolio. An investor who has been paying someone or actively manages his or her portfolio has every right to insist on knowing what sort of performance was obtained. Such information can be used to alter either the constraint placed on the manager, the investment objective given to the manager, to the amount of money allocated to manager. Perhaps more importantly, by evaluating performance in specified ways a client can forcefully communicate his\ her interest to the investment manager and in all likelihood, affect the way in which his or her portfolio is managed in the future. Moreover, an investment manager, by evaluating his or her own performance, can identify sources of strengths or weakness

Portfolio management is the art of handling a pool of funds so that it not only preserves its original worth but also overtime appreciates in value and yields an adequate return consistent with the level of risk assumed. The process of portfolio management involves a logical set of steps common to any decision planning, implementation and monitoring Portfolio management is basically concerned with efficient management of portfolio

investment in financial assets, including shares and debentures of companies. Portfolio management assumes periodic supervision of the security in the portfolio. Buy and hold philosophy in the present competitive society and in view of the fluctuations of the stock market is not a very prudent. There has to be rational planning of action for a sound portfolio management. The management may be by professionals or by individuals themselves. Portfolio of an individual or a corporate unit is the holding of securities and investment in financial assets. These holding are the result of individual s preferences and decision regarding risk and return. The process of portfolio management is closely and directly linked with the process of decision making. The basic problem of portfolio management is to establish an investment objective or goal and then decide the best ways to reach the goal with the securities available. This has been stated as an attempt by the investor to obtain the maximum return with minimum risk

1.2 Focus of study:

The increasing number of insurance company's bank and financial institution has created Trade, industry, agriculture and other sector has not comparatively been extended so, these companies has to face so many difficulties to mobilize their fund to profitable sector. The risk is involved in every steps of the return. Every investor wants a maximum return with a minimum level of the risk. So to minimize of risk the investor should diversify its investment by means of portfolio in this study trend of investment process of investors in common stock of insurance company in various sectors by the mean of portfolio will be analyzed, the existing investment situation and the investment strategy in future will be analyzed. Our main focus of the study is to analyse, risk, return and portfolio Analysis and performance evaluation of the common stock of some selected insurance companies of Nepal.

1.3 Statement of the problem:

Insurance company on one Hand provides the financial security against future loss and on the other hand it has become part and parcel of the contemporary business world. The numbers of insurance companies are increasing in Nepal but at the same time, there are a numbers of constraints that hinders the development of insurance in Nepal. The following are the reasons for low financial performance or lack of the net amount of earning. Due to the insufficient numbers of industries, limited market opportunities and lack of profitable investment opportunities Majority of Nepalese people have no knowledge of insurance due to poor education .Most of them live under the poverty line with limiting investments. Most of the Insurance Companies are located in urban areas with limited target customers leaving out a very large rural population. Most companies lack professionalism, speedy transaction and timely payment of the amount of claimed insurance. There is Negligence of agents, brokers and development officers on timely premium collections. Most of all, the Political turmoil in our country has hindered the growth of insurance companies to a large extent. With the adoption of liberal economic policy, the numbers of business companies are increasing tremendously in Nepal. The competition in the insurance business has turned to the more intense. Moreover, increasing violence and terrorism has been threatening the insurance market. Many insurance companies are established in Nepal in a short span of time and investment is most important factor for both investors and management of these companies because they collect fund from general people

through the issuance of common stock. But if investment decision is taken without adequate analysis of risk and return of common stocks, profitable return is not possible and efficient portfolio construction is also not possible. Consequently, it wouldn't lead to long lasting existence of these companies. These are the reasons why these insurance companies are suffering losses. In fact, after the establishment of NEPSE in Nepal, Nepalese capital market started to grow rapidly. But investors who are directly or indirectly related to capital market, their attitudes, beliefs and knowledge have not been yet changed. They lack the theoretical knowledge about risk, return, portfolio and diversification. They also are less familiar with financial activities of those companies listed in NEPSE, So that there are most of the investors investing in less profitable companies. Investor s must be able to analyze risk, return of stocks they want to invest. They are solely responsible for their investing decision. The theory about efficient market condition about the equality of intrinsic value which is calculated by required rate of return and growth, and current stock price led by rational invertors, is not correctly found in real world. This is not applicable in out context. Because of lack of knowledge to interpret the information, the invertors make irrational decision regarding stock transaction therefore the stock price is determined by the factor rather than the performance of common stock People assume more than real risk in stock investment. Simple and clear technique to analyze risk associated with return is not available

Problem issues raised for the proposed study are as follows:

What is the risk and return in insurance business? How does the risk and return of the listed insurance companies of Nepal compare?

What are the important tools for the investors to measure the performance of the portfolio?

How do the investors take investment decisions?

What is the proportion of systematic risk in the total risk?

What are the ways of measuring risk and what is cost of risk?

1.4 Objective of study:

The fundamental objective of the study is to analyze the financial performance of the insurance Companies of Nepal. The specific objectives of the study are:

- To evaluate the common stock of insurance companies in terms of risk and return.
- To estimate the optimal portfolio among the common stock investment of the insurance companies
- To determine whether the shares of the insurance companies of Nepal are over or under priced by analysing the risk and return characteristics of the individual shares
- To evaluate the systematic and unsystematic risk associated with the securities under the study.
- To compute and evaluate portfolio performance and rank them accordingly.

1.5 Hypothesis of study: Test of hypothesis is a process of testing of significance regarding the parameter of the population on the basis of the sample drawn from the population. In testing hypothesis, we examine on the basis of the statistics computed from the sample drawn whether the sample drawn belongs to the parent population with certain specified characteristics or not.The study includes student's t-test for testing the hypothesis, which is also called student's t distribution It is the test of the significance for a single or double mean. The reason for using t-test in the study is sample size of small no. i.e. n<30, standard deviation is unknown and parent population from which sample is drawn is normal.

Following hypothesis has been formulated in the study:

Hypothesis I

Null Hypothesis H_0: $\mu = 1$ i.e. the portfolio beta of the individual insurance companies and the market beta is equal to 1 which means there is no significant difference between the portfolio beta of insurance companies common stock and market beta.

Alternative Hypothesis H_0: $\mu \neq 1$i.e. the portfolio beta of the individual insurance companies and the market beta are not equal to 1 which means there is significant difference between the portfolio beta of insurance companies' common stock and market beta.

Hypothesis II

Null Hypothesis H_0: $\mu = \mu_0$ i.e. there is no any significance differences between average return on common stock of individual insurance companies and market return.
Alternative Hypothesis H_0: $\mu \neq \mu_0$ i.e. there is significance differences between average return on common stock of individual insurance companies and market return.

Hypothesis III

Stock price of insurance companies are underpriced.

Hypothesis IV

Null Hypothesis H_0: $\mu = \mu_0$ i.e. there is no any significance differences between dividend distribution policy of individual insurance companies.
Alternative Hypothesis H_0: $\mu \neq \mu_0$ i.e. there is significance differences between dividend distribution policies of individual insurance companies.

Hypothesis V

Portfolio construction within same sector will not minimize risk significantly.

1.6 Significance of the Study:
The history of insurance companies in Nepal is very short. The first insurance company of Nepal is Rastriya Bima Sansthan, which was established on 15th December 1968 A.D. After this the number of insurance companies got established. Currently there are 20 listed insurance companies functioning in Nepal. As insurance business is growing in

Nepal, People are attracted to invest in such company's shares for the purpose of getting greater returns. Dividend decision is important instrument that helps to decide the investor whether to invest in particular firm or not. So, the dividend policy of the company has become an efficient way to attract new investors and maintain goodwill of the company. In capital market the return can be earned by means of dividend and capital gain. But due to the lack of enough knowledge investors are investing using trial and error method. So the present study will make the shareholders and investors aware of dividend practices of the insurance companies. Insurance business is very important to industrial and commercial revolution. It gives financial security to individual and business enterprises. It is due to financial security given by insurance companies that make possible for world to come in this stage. Insurance is very important in the developing countries like Nepal. The per capita income is very low. Most of the families depend in a single person's income. If the earner becomes ill, the family finds nothing to survive on. Life insurance may be good solution in such circumstances. Still, we can say that insurance is not getting enough popularity among people. Stock markets being one of the prominent sources of economic development, ultimately, its potential investors are biggest assets. The target of this study is to explore and increase stock investment. Modern security analysis emphasizes the risk return analysis rather than price and dividend estimates. And, the risk and return estimate is dependent upon the share price and the dividend stream. The investors are investing in shares by trial and error approach. Traditional investment analysis emphasizes the projection of prices and dividends. That is, the potential price of a firm common stock and the future dividend stream are forecasted and then discounted back to the present. This intrinsic value is then compared with the security's current market price. If the current market price is below the intrinsic value, a purchase is recommended. Conversely, if the current market price is above this intrinsic value, a sale is recommended. Although the modern security analysis emphasizes the risk and return estimates rather than mere price and dividend estimates. The risk and return estimates, of course, are dependent on the share price and the accompanying dividend stream. Therefore considering all these facts, this attempt of analyzing dividend policy and practices of Insurance companies of Nepal provide some guidelines to investors, insurance companies, policy maker and future researcher as well. Apart from it, this study will be of interest to the researchers and academicians. Here Investors are investing in shares following the trial and error approach. Hence, it is necessary to establish clear picture about the return from investing in securities. Not only risk and return but the variability in return is to be addressed. The factors i.e. risk and returns are the most important factors influencing investment decisions and process.

The study is significant to the management of the company to take the right decision regarding the premium collection and investment. It also helps the management of other insurance companies. Shareholders, investors, customers, competitors, personnel and other stakeholders can get necessary information. Researcher will also be benefited to research about the NLIC Ltd. Existing and potential public investors are not well known about the real financial strengths and weaknesses of the public companies in which they are investing or going to invest their funds. This study is focused on the risk, returns analysis of individual insurance companies, and estimates an optimal portfolio among common stock investment of insurance companies. This study is conducted to provide basic and necessary information about investment and investment process. This current study will help to take an appropriate decision about how to set

investment policies and how to analyze and evaluate the investment worthwhile over the different time period. The focus of the study is on the analysis of risk, return and portfolio, which will enable investors to guide the investment activities. Benefits of the study will be received by security businesspersons, issue managers, brokers, marketing managers and general investors. This study will encourage the management for policy making. This study will also be valuable to investors, stakeholders, capital market, government, financial institutions, finance personnel and research students.

1.7 Limitations of the study:

The study is based on the secondary data of few years period i.e. from fiscal year 2005/2006 to fiscal year 2009/2010, therefore conclusion about the result confines only to stated period. The evaluation is made through the analysis of financial statement published and presented by the company. The study is based on some of the selected insurance companies among various insurance companies. Mainly the study is concentrated on risk, return and portfolio estimation of insurance companies Among the different financial assets, only common stock is taken for the purpose of study. To some extent data published on website and that of insurance companies may differ. So, the data from website of the related insurance companies are taken as authentic ones the study has to be conducted with time limitations being a partially requirement for an academic program.

1.8 Organization of the Study:

In this study, only five chapters are included which are as follows:

The first chapter deals with the introduction that includes background of the study, introduction of the study, profiles of the selected insurance companies, statement of problem, objective of study, significance of the study and limitation of the study.

Second chapter is review of literature, it includes conceptual framework and review of major studies i.e. review of books, review of journals and review of previous thesis.

Third chapter explains the research methodology used in the study, which includes research designs, nature and sources of data, population and samples, method of financial analysis and statistical analysis.

Fourth chapter is the heart of the study. This chapter includes presentation and analysis of data using financial and statistical tools. Major findings are also presented in this chapter.

Fifth chapter is concerned with summary, conclusions and recommendations.
Bibliography and appendixes are presented at the end.

CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

This chapter deals with theoretical aspect of topic, which includes review of various literatures such as books, newspapers, journals, magazines, articles websites, independent researches, university thesis and other relevant researches or studies. In other words, this chapter provides review on literature that is available in the topic risk, return and portfolio analysis. This section covers those studies that are conducted by academicians and scholars.

2.1.1 Conceptual frame work:

Before getting into the core subject matter, it is necessary to have general knowledge of risk, return and portfolio. Major focus is on analysis of risk, return and portfolio within the common stock of selected insurance companies

2.1.2 Companies Common Stock:

The security that represents the ultimate ownership (and risk) position in a corporation of a stock holder common stock is a source of long term financing. Common stock certificates the legal documents that evidence ownership (or equity) in a company that is organized as corporations they are also the marketable financial instruments. “Common equity in a corporation or partnership or proprietorship interests in an unincorporated firm constitute the first source of funds to a new business and the base of support for borrowing by existing firms." There are different instruments which includes a capital structure of a firm, such as common stock, preference stock, debt and so on. The most important one is common stock or equity share or ordinary share. Common stock represents the ownership position in a corporation. Common stock is the first security of a corporation to be issued and in case of bankruptcy, the last to be retired. They have the lowest priority claim on earning and assets of all securities issue. Common stockholders have the power to elect the board of directors. Common stock does not get any special right but it has voting right. Common stock holder is the main risk bearer of the company. They have voting right, controlling and managing right of the company. Out of the common stock holder a few people are chosen as board member or as board of director. This means stockholders have voice in management. Shareholders are requested to vote in order to elect board of directors and change memorandum of association. This is legal power of the shareholders to change authorized capital or objectives of business, approval of ordinary shareholders is required Common stock holders have a direct investment in the company.

Among all the securities Common stocks are assumed to be one of the most risky securities since they don't have fixed periodic income. So, they have higher risk and tend to earn higher return proportional to their risk. Securities other than common stocks, such as bonds and preference shares have fixed income, which is receivable in both favorable and unfavorable condition of the company, that's why these are assumed to be less

risky securities. Therefore, the main two features of common stock are risk and return associated with them. "Common stock known to be normally the most expensive form of long term financing, this is because dividends are not tax deductible and because common stock is a riskier security than either debt or preferred stock"
"Equity share is a certificate of ownership in a corporation a residual claim against both assets and earnings of a business firm". – (Peter S. Ross 1997)
As the owner of the company stock holders has many rights, some of these rights are specified by the law and some are specified by the company's character. There are two types of right collective right s and specific rights.

The collective right includes election of the directors of the corporation, authorization of the sale of the fixed assets, right to adopt and amend by laws right to enter into merger. Right to issue preferred stock debenture, bond and other securities. Right to change the amount of the authorized capital right to amend the corporate character

The specific right includes sell of the stock certificate and transfer of the ownership Right of voting in the manner prescribed by the corporate charter. Right to sharing proportionately the residual amount of assets at the time of liquidation. Right to share proportionately in any new stock sold. Right of sharing equally on a per share basis in any distribution of corporate earnings in the form of dividends. Right to inspect the corporate book

2.1.3 Valuation of stock:

Common stock is owner ship security .common stock holder get return from common stock so people typically buy common stock expecting to earn dividend plus a capital gain when they sell their shares at the end of some holding period. Financial managers use different analytical techniques for valuing common stock. The stockholder expects regular earnings in the form of dividends and capital gain by upward movement of the stock price. To maximize the stock price, stock valuation model can be used as important tools. Mainly three basic models are used to value stock. (Pike & Neale, 1996, 21) it is the process or technique of calculating intrinsic or theoretical or formula value of the common stock in order to know whether the stock is overpriced or under priced.

Valuation of different common stock from the prospective of growth.

Zero growth model: $V_0 = \frac{DPS}{K_S}$

Constant growth model: $V_0 = \frac{D_1}{K_S - g} = \frac{D_0(1+g)}{K_S - g}$

Valuation of super normal growth model.

$$V_0 = \frac{D_1}{(1+K_S)^1} + \frac{D_2}{(1+K_S)^2} + \frac{D_3}{(1+K_S)^3} + \frac{\frac{D_3(1+g_n)}{K_s - g_n}}{(1+K_S)^3}$$

Model based on price earnings ratio

P/E ratio is used in stock valuation

Intrinsic value of common stock V_0 =P/E ratio X EPS

Where,

P/E ratio = $\frac{DPR_0(1+g)}{K_s - g}$

Where,

DPS =dividend per share,

K_s= required rate of return on common stock.

g = growth rate

2.1.4 Market price of share

Market price of Shares as the output of the demand and supply interaction is the most influencing factor in determining the price of the stock. (Ackerman, 1980, 10) In relation to the interacting forces of demand and supply, i.e. Market Price is determined at given time and the prices and volumes of its past transaction are meaningful indication of probable relationship of future supply and demand pressure. In addition, such relationship is the most important element in determining the probable direction of the price movements. If the demand exceeds the supply, the price will rise and if the supply exceeds demand, the price will fall.

2.1.5 Profit and wealth maximization:

Traditionally the goal of the firm is to maximize the profit. Here the profit refers to the earning per share. The firm can maximize profit by using the available resources efficiently. Efficient management of the available recourses of the firm results in (1) Reduction in the cost of the inputs for given output. (2) Increase in the output at given constraints of the inputs. In the case of output constraints, efficient management of available resources of the firm brings down the cost of the inputs and increases the earnings. We can make it clear with an example of the construction business. In the

construction business output is constant. A contractor can reduce the cost of construction work by managing the resources efficiently and maximize the profit.
According to the profit maximization goal, every decision i.e. dividend policy decision, assets management decision, financing and investment decision, of the financial manager should contributed to the maximization of profit. Frequently, profit maximization is taken as proper goals of the firm but it has some serious drawbacks. It could not be taken as good decision criterion due to following shortcomings.

First, profit is based on accounting concept and it does not take the duration of the expected return into account. So, profit maximization cannot be accepted as a financial decision criterion.
Second, profit may be maximized by harming the firm. For example, management may defer the maintenance and renovation of factory building and overhauling of the plant and machinery. Deferment of such expenses may increase the profit in the current year but it may harm in the year to come.
Third, the profit maximization decision criterion does not consider the quality of earning in terms of risk-(variability of the expected earnings)

Fourth, the management always try to invest the retain profit in the profitable business sector and maximizes the profit. It declares the dividend only if it does not have any investment opportunities that yield return greater than that of the investment of shareholders. Thus, profit maximization goals calls for a zero dividend payout policy.

Wealth maximization is considered as a proper goal of the firm and it is generally accepted as an appropriate decision criterion. Wealth refers to the shareholders' wealth and it is measured in terms of the market price of the share. So whenever we use wealth maximization, it implies the maximization of the share price.
Wealth maximization is considered to be a more inclusive decision criterion. It is superior to profit maximization because it overcomes all shortcomings of profit maximization decision criterion. Wealth maximization in corporate qualitative aspect-risk, of the decision by discounting the expected future cash flow stream at appropriate discount rate. Wealth maximization decision criterion incorporates the time dimension in decision making process by considering the time value of money. Thus the wealth maximization goal promotes the efficient allocation resources in the economy.

2.2 Investment and its process

"An investment is the commitment of funds made in the expectation of some positive rate of return. If the investment is properly under taken will be commencement with the risk that investor assumes"(Fisher and Jordan; 1970:112)
"Investment in its broadest sense means that sacrifice of current dollars for future dollars. Two different attributes are generally involved in time risk. The sacrifice takes s place in present and is certain. The reward comes later, if at all, and the magnitude is generally uncertain"(Sharpe, Alexander & Bailey; 2003:512).
In another words Investment may be defined as a sacrifice of current rupees for future rupees. Two different attributes are generally involved in investment i.e. time and risk factor. The sacrifice takes place in the present and is certain. The reward comes later if at all, and all the magnitudes is generally uncertain. An investment is the commitment of

funds made in the expectation of some positive rate of return. We have heard the word "investment" because it has become a household word and is very popular with people from all walks of life. While investing future return one should forget the amount he/she investing i.e. capital, a collective form of surplus. The surplus is that part of money deducting all the expenses from income. A Person spends his/her years in capital formation process. That is why each one should be rational while investing since most of the investors are risk averters they require additional unit of returns for bearing one more level of risk. People always tries to reduce risk factor common definitions says that contribution of present values for future is investment or it is a research of certainty within uncertainty. There are many sources available for investment opportunities such sources may be securities, real estate business and so on. However, in the sense of finance, the term investment is to make investment in securities. The securities may be equity share, preference share, bond debenture, option, treasury bills or whatever the form

2.2.1 Investment alternatives:

There are various investment alternatives available to the investors in the market. Some of the investment alternatives are common stock, preferred stock, bonds, option warrants, rights, futures, real estates, precious metals etc. The capital market of Nepal is very small to provide vide range of investment. Some of the investment alternatives are:

Common Stocks:

The common stock entitles its holders as an owner of the company. Common stock represents owner position in the corporation. It has a residual claim, in the sense that creditors and preference shareholders can receive payments only after the payment of all other claims with preferential basis. Common stock shareholders bear high risk but limited liability. In bankruptcy common stockholders are in the principal entitled only to any value remaining after all prior claims have been satisfied.

"All the shares, with the exception of preference shares, are regarded as equity shares (common stock) ". In Nepal as the provision of Nepal Company Act 2053, the par value of share should be Rs. 10 or Rs. 100. The issuance trend of common stock in Nepalese company is Rs.100 per share. The market value of common stock is the value determined by demand and supply of the market. Market value fluctuates regularly by the influence of the investment environments. The value of the common stock includes amount retained, intrinsic values of the shares and amount of profit gained after the payment of dividend and other non-operating income.

Preferred stock:

The preferred stock is a hybrid form of long- term financing with the combined features of both common stock and long- term debenture. It is the fixed income security. Company pays dividend at predetermined rate to preference shareholders. Preference shareholders have priority in dividend distribution and liquidation. Preferred stock is a hybrid security because preferred stock has fusion qualities of bond and equity. A preference shareholder does not have voting right. it is suitable for that investors who does not want to bear high risk but wants fixed return.

Government bond:
Government bonds are the fixed income securities issued by government. These securities are among the safest of all investments and provide nominal interest. Government securities are issue on the behalf of the government in Nepal. Saving bonds, Citizen saving bonds and treasury bonds are example of government bonds in Nepal.

Municipal Bonds:
Municipal bonds are debt obligations issued by state or local governments and agencies. Revenue bonds and general obligation bonds are the example of such bonds. In Nepal, municipal bonds are not in practice, however it is a good investment alternative.

Corporate Bonds:
The corporate bond is the long term promissory note issued by a corporation a corporate bond has more risk and return than the government bond and municipal bond the bond holder receive fixed return and the principle amount at the maturity date and have priority before common stock and preferred stock in the event of the liquidation the bond and the debenture are used synonymously. It is traded in the organized exchanges and the OTC market.

Derivative Securities:
Securities that derive their value from the value of an underlying asset are called derivative securities. Options, commodity futures, financial futures, warrants, rights, etc are the examples of such securities. These securities are the good investment alternatives in the developed stock market but in Nepal they are not in practice.

International Investments:
International investment is the investment by individual in debt or equity securities issued by organizations outside the country of residence of the investors. Multinational organizations, foreign stocks traded on a local exchange etc. are its example.

2.2.2 Expected rate of return:

After purchase of the financial assets such as the share of the stock the investor desire to increase their wealth i.e. is the positive return in their investments. As the future is uncertain the investor based their decisions on what they expect to happen and their assessment of how likely it is actually occurs will be close to what they expected to happen. The expected rate of return is the increase in the expected after tax value of the initial investment over the holding period.

An investor can obtained two kinds of return from an investment in a share of the common stock Return from price appreciation (or loss from price depreciation) sometimes called capital gains (or losses).Cash flow income from cash dividend or coupon interest payments Capital appreciation is the difference between ending value and beginning value of an investment. Returns are defined as the dividend yield plus capital gain/loss. Sum of these two sources of income (or loss) equals the total return and can be express in percentage as follows:

Single period rate of return, r_t $= \frac{(price\ change) + cash\ dividend}{purhase\ price\ at\ the\ start\ of\ the\ period} = \frac{(P_t - p_{t-1}) + D_t}{P_{t-1}}$

Hence, return comes from two sources, income and price appreciation.

Where,

P_{t-1} = starting stock price.

P_t = ending stock price.

D_t = cash dividend for time t.

Here we take example of two stocks A and B, Let us assume: If the required rate of return of stock A is lower than expected rate of return then stock A is said to be under priced, and if the required rate of return of stock B is higher than the expected rate of return E(r) than Stock B Is said to be overpriced, hence the stock B expected to provide lower return than required return to compensate systematic risk .Investors seek to invest in stock A for superior return. "Investing in stock A should rush to buy it. This action could drive the price up and the expected return down. How long would this continue? It would continue until the market price was seen that the expected return would now lie on the SML. In the case of stock B, Those investors holding this stock would sell it, recognizing that they could obtain a higher return if the same amount of systematic risk with other stocks. This selling pressure would drive stock B's market price down and its expected return up until the expected return was on the SML." (Van Horne & Wachowicz, 1995, 89)

The multi period (or compounded) rate of return is called the geometric mean return. The geometric mean holding period return gives elastic result as it considers reinvestment opportunity which means the cash flow of the preceding year can be reinvested at the available rate of return. But the simple arithmetic mean return ignores the re investment opportunity of fund.

$$\overline{HPR}_g = \prod_{t=1} (1+HPR_t)^{1/n}$$

Π = Represents the product

Expected rate of return is determined on the basis of real return of any assets in the past. in such condition arithmetic mean of historical return is assumed as the expected rate of return.

$$HPR_J = \frac{\Sigma HPR_J}{N}$$

Where n = No. Of periods, HPR=Holding Period Return HPRg = Geometric mean

2.2.3 Risk on common stock:

Risk is defined as the uncertainty in investment return or changes in the investment return or more formally the variability of the actual return from the expected return associated with given assets. The greater the variability of return on assets said to be riskier assets and the more certain the return from an assets, the less the variability and therefore the less risk. Risk refers to the chance that some unfavorable event will occur. If you invest in speculative stocks (or, really, any stock), you are taking a risk in the hope of making an appreciable return." (Weston & Brigham, 1995, 182-183)

In reality, risk occurs when we cannot be certain about the possible future outcomes of particular activity or events. So, we are not sure that risk will occur in the future consequently. Risk results from the fact that the action such as investment can provide the more than one outcome in future. In real sense, risk is the chance of losing future return and investment amount in future. Assets having great chance of loss are viewed as more risky than lesser chance of loss. More formally, the term risk is used interchangeably with uncertainty to refer the variability of return associated with the given assets. Risk is measured in many ways but commonly three methods are viewed as useful standard.

Every investment has the uncertainties. The uncertainties make the future investment returns risky. The some of the sources of uncertainty that contribute to investment risk are as follows:

Business risk:

It is that type of risk which refers to the uncertain about the rate of return caused by nature of the business. Caused of the business risk are uncertain about the firm's sales and operating expenses.

Interest rate risk:

It is potential variability of return caused by changes in interest rate in the market If market interest rates rise, then, investments values and market price will fall and vice versa. The variability of return that results is interest rate risk. This interest rate risk affects the prices of bonds, stock, etc.

Purchasing power risk:

It is the variability of return an investor suffers because of inflation. Inflation seems to be the normal way of life in most countries today. When inflation takes place, financial assets such as cash, stocks, bonds, etc. may lose their ability to command the same amount of real goods and services they did in the past. The real rate of return on financial assets may not adequately compensate the holder of financial assets for inflation.

Financial risk:

The risk related to the firm's capital structure i.e. debt management, preferred stock and equity share. The firm is practically financed by debt that requires fixed interest payment or by preferred stock that requires fixed preferred stock dividend payment than this fixed charge in trade financial leverage.

Default risk: It is the portion of an investments total risk that results from changes in the financial integrity of the investment. For instance, when a company that issues securities moves further away from bankruptcy or closer to it, these changes in the firm's financial integrity will be reflected in the market price of its securities. The variability of return that investors experience as a result of changes in the creditworthiness of a firm in which they invested is their default risk.

Liquidity risk: Liquidity risk is associated with the uncertainty created by the in ability to sell the investment quickly for cash. The investors consider the sales of investment if he/she faces to uncertainties of
What price would be received?
How long will it take to sell the assets?

Management risk:
The risk created due to different management policies decision and programs affect the risk faced by the investors.

Measurement of risk

Standard deviation:
Standard deviation is the most common statistical indictors of an assets risk. It measures the dispersion around the expected value. It measures the tightness or variability of a set of outcomes we can measure risk by examining the tightness of the probability distribution associated with the possible outcomes. In general, the width of a probability distribution indicates the amount of scatter, or variability, of the possible outcomes. Therefore, the higher the probability distribution of expected returns, the less is its variability thus, the smaller the risk associated with the investment. The square root of the variance of the rates of return is called standard deviation of the rates of return. The symbol is **σ,** pronounced as "sigma". It is measure of total risk. The small standard deviation shows the lower risk of the stock and vice-versa.

$$\sigma^2 = \text{varience} = \text{var}(r) = \sum_{j=1}^{n} P_j[R_j - E(r_j)]$$

Where,
σ_j = standard deviation of investment j

p_j = probability of the occurrence

r_j = return on investment j

The standard deviation can sometimes be misleading in comparing the risk or uncertainty, surrounding alternatives of they differ in size. To adjust the size or scale, problem, the standard deviation can be divided by the expected return to compute the coefficient of variation (C.V.)

Coefficient of variation:

C.V. is the measure of dispersion that is useful in comparing the risk of assets with expected return. The coefficient of variation shows the risk per unit return, and it provides the more meaningful basis for comparison when the expected returns on two alternatives are not the same. Higher the coefficient of variation, higher will be the risk and vice versa. Thus, the coefficient of variation is the measure of relative dispersion (risk), a measure of risk per unit of expected return. The larger the CV, the larger the relative risk of the investment.

$$C.V. = \frac{\sigma_j}{\overline{HPR_j}}$$

Beta Cofficient:

Systematic and Unsystematic risk

Systematic risk is the portion of the total risk of an individual security caused by market factors that simultaneously affect the prices of all securities "Systematic risk is the variability of return on stocks or portfolio associated with changes in return on market as a whole." (Van Horne & Wachowicz, 1995, 88).

Mathematically, the systematic risk beta is measured as the covariance of the stock returns with the market returns expressed per unit of market variance as follows:

$$\beta_j = \frac{COV_{jm}}{\sigma_m^2}$$

The beta coefficient is an index of systematic risk. Betas can be used for a ranking of the systematic risk of assets. An asset with ß=1 is moderate asset because market portfolio and asset s return is equal. An asset with ß> 1 is an aggressive asset because it is more volatile than the market portfolio. If an assets has a ß<1, the asset is defensive asset and the response of the asset will be less than that of the market.

Unsystematic risk is the portion of total risks that can be diversified. It is also called non-market risk or avoidable risk or company specific risk or diversifiable risk. It is caused by events particular to the firm. For example, labor strikes, management errors, inventions, advertising campaigns, shifts in consumer taste, and lawsuits, etc. Systematic risk has its source factors that affect all marketable assets and thus cannot be diversified away. The sources of systematic risk are market pervasive. The measure of systematic risk permits an investor to evaluate an asset's required rate of return relative to the systematic risk of the stock. Unsystematic (company specific/unique) risk can be reduced through diversification. The relationship among total risk, systematic risk and unsystematic risk are shown below:-

Total risk = Systematic Risk + Unsystematic Risk

For an individual security (i)

$\sigma_i^2 = var(r_i)$

$\sigma_i^2 = \beta_i^2 (var(rm)) + var(e)$ ⟵ Unsystematic risk

where, σ_i^2 = var (r_i)= varience of return of individual security i

β_i = Beta coefficient of individual security i

var(rm) or σ_m^2 = varience of return of market.

Variance(e) = residual variance or residual error or unsystematic risk.

Investor should have sound knowledge about the trading market of security making investment on securities.
The investment process describes how an investor makes decisions who to invest in, how extensive investment should be, and when they should be made at securities. The investment process involves five steps. In short it is also called **PACRE [P**=policy, **A**= Analysis, **C**= Construction of portfolio, **R**= Return, **E**= Evaluation**]**
First step is setting of the investment policy which involves the identification of the potential categories of the financial assets for consideration in the ultimate portfolio. This identification will be based on the investment objectives, amount of wealth and the tax status of the investor.
Secondly to perform the security analysis i.e. examining of a number of individual securities in order to identify those securities that currently appear to be missed price.
There are two main approaches to the security analysis. They are technical analysis and the fundamental analysis.
Under the technical analysis the stock market prices is studied to predict future price movements for the common stock of a particular firm. The person who involve in such work of technical analysis is called technician. First, past prices are examined in order to identify recurring trends or patterns in price movement.
The fundamental analysis is begins with the intrinsic value of any financial assets equals to the present value of all cash flows the owner of the assets expect to receive. Once the intrinsic value of the common stock ($V_{i,t}$) of a particular firm has been determined, it is compared with security' current market price of the common stock ($P_{i,t}$)
If Vi,t > Pi,t then purchase the security.
If Vi,t < Pi,t then sell or short sell* the security
If Vi,t = Pi,t then do not trade the security

The third step of the investment process is construction of portfolio. Construction of portfolio involves identification of specific which to invest, along with the proportion of investable wealth to be put into each security. Here, selectivity, timing and diversification need to be addressed by the investors.

The fourth step of investment process, portfolio revision, which involves both, realizing that the currently held portfolio is not optimal and specifying another portfolio to hold with superior risk-return characteristics. The investor must balance the costs of moving to the new portfolio against the benefits of revision.
The fifth step in the investment process, portfolio performance evaluation, involves determining of the actual performance of a portfolio in terms of risk and compares the performance with that of an appropriate "benchmark" portfolio.

2.3 Portfolio analysis of different assets:

A portfolio is the combination of securities. It is an investment made on to or more than two assets. Portfolio is the holding of securities and investment in financial assets viz. bond stock etc. In portfolio, investor analyzes the future return of securities. The objective of portfolio investment is to develop combination that provides minimum return at chosen level of risk. Efficient portfolio always provides the highest possible return for any specified degree of risk and lowest possible risk for any specific rate of return. Portfolio managements related to the efficient portfolio investment in financial assets. We can diversify and minimize risk to some extend by managing portfolio. The main objective of portfolio is to maximize the return and minimize the risk. Overall objective of the portfolio includes generate regular and stable income, safety of investment, tax benefit, appreciation of capital etc. The portfolio manager seeking efficient investment works with two kinds of statistics, expected return statistics and risk statistic. While talking about the portfolio lets us discuss about the mode of investment. Portfolio investment is the investment in the various securities i.e. portfolio in the collection of security to diminish the degree of risk. Portfolio is the tool for decision-making. It is a selection of optimal alternatives available and attainable that provides highest possible return from lowest possible risk for specific return. Portfolio theory helps in rational investing for desired return. If the fund is invested in more than a single security risk can be diluted or spread. There is a saying "Don't put all the eggs in a single basket." It means that one can lose all the eggs if some unlikely events occur so we can say that risk cannot be diversified by investing in single assets. Obviously, risk can be diversified by forming portfolio. Thus the objectives of the portfolio analysis is to develop a port folio that has the maximum return at whatever level of risk the investor deems appropriate.

Markowitz (1952) developed the concept of an efficient portfolio in terms of the expected return and standard deviation of return. It analyses the ingenerate relation between the return and risk for portfolio quantification. The Markowitz model is the foundation for portfolio. It makes people be able to describe and solve the optimization question of a portfolio by the numbers. The Markowitz model is normative; it shows how investors ought to behave. Thus this model is also known as two factor theory. In this model, there is total risk and it is symbolized by standard deviation. Investors are rational and investors always want highest possible mean return in the given level of risk. Thus, the investor s maximizes return. This theory is based on following assumption:

Usually investors are risk aversion by nature.

Expected return of any port folio is the mean value of probability distribution of future return.

Variability of return created in expected return is the risk, which an investor bears.

The determination of risk return is the utility curve or indifference curve. so high risk taking investor expects high return where as low risk taking investor expects low return.

Investor follows dominance generally.

The capital-asset pricing model (CAPM) discovered by Sharpe (1964), Litner (1965)and Mossin (1966) is a general equilibrium model that attempts to provide more explicit answers for those implications. The CAPM not only allows improved understanding of market behavior, but also provides practical benefits. At the same time, it also provides a practical mechanism for evaluating performance in a risk-adjusted mode. This model thus provides the initial basis for the practical implementation of the many aspects of portfolio analysis.

2.3.1 Capital assets pricing model (CAPM)

CAPM is an equilibrium model of the trade-off between expected portfolio return and unavoidable risk. In this model, a security's expected return is the risk free rate plus a premium based on the systematic risk of the security. In the context of systematic risk, CAPM is essential. "The major implication of the CAPM is that the expected return of an asset will be related to a measure of risk for that asset known as beta (ß)." (Sharpe, Alexander &Bailey, 1996, 263). "CAPM is a model that describes the relationship between risks & expected (required) return. In this model, a security s expected (required) return is the risk free rate plus a premium based on the systematic risk of the security. CAPM considered the backbone of modern place theory for financial markets. It is also widely used in empirical analysis, so that the abundance of financial statistical data utilized systematically and efficiently. Moreover, this model is applied in practical research and has thus become an important basis for decision making in different areas. This related to the fact that such studies require information about firm's cost of capital, where the risk premium is an essential component. Investor bears risk only he finds compensation for bearing risk otherwise he invests in risk free assets. Treasury bills are generally considered as risk free assets. The CAPM relates equilibrium expected return to each level of systematic risk. These expected returns can be interpreted as the appropriate discount rates, as the cost of capital, or as equilibrium rate of return that investor expects for that amount of systematic risk. Systematic or un diversifiable risk is the main factor risk- averse investors should consider in deciding whether a security yield enough rate of return to induce them to buy it. Other factor such as the "glamour" of the stock and the companies financial ratios, are important only to the extend they affect the security's risk and return. The CAPM graphically represents the trade –off of systematic risk for return that investors expect is entitle to receive. The beta coefficient of Treasury bill is zero, which denotes that there is no systematic risk. The return of the Treasury bill is unaffected by market environment. The market portfolio is the combination of all the securities available in the market. The beta coefficient of the market portfolio is the market risks i.e. one. Beta coefficient of a security is the security's covariance with the market portfolio divided by the variance of the market portfolio.

Using beta as an index of risk, the CAPM develops an equation, known as SML equation, to establish the relationship between return and the risk. The SML equation is as under

$$Kj = Rf+[E(Rm)-Rf]\beta j$$

Rf = Risk free rate of return

E(Rm) = Expected rate of return on market portfolio.

Bj = Beta Coefficient Of stock j

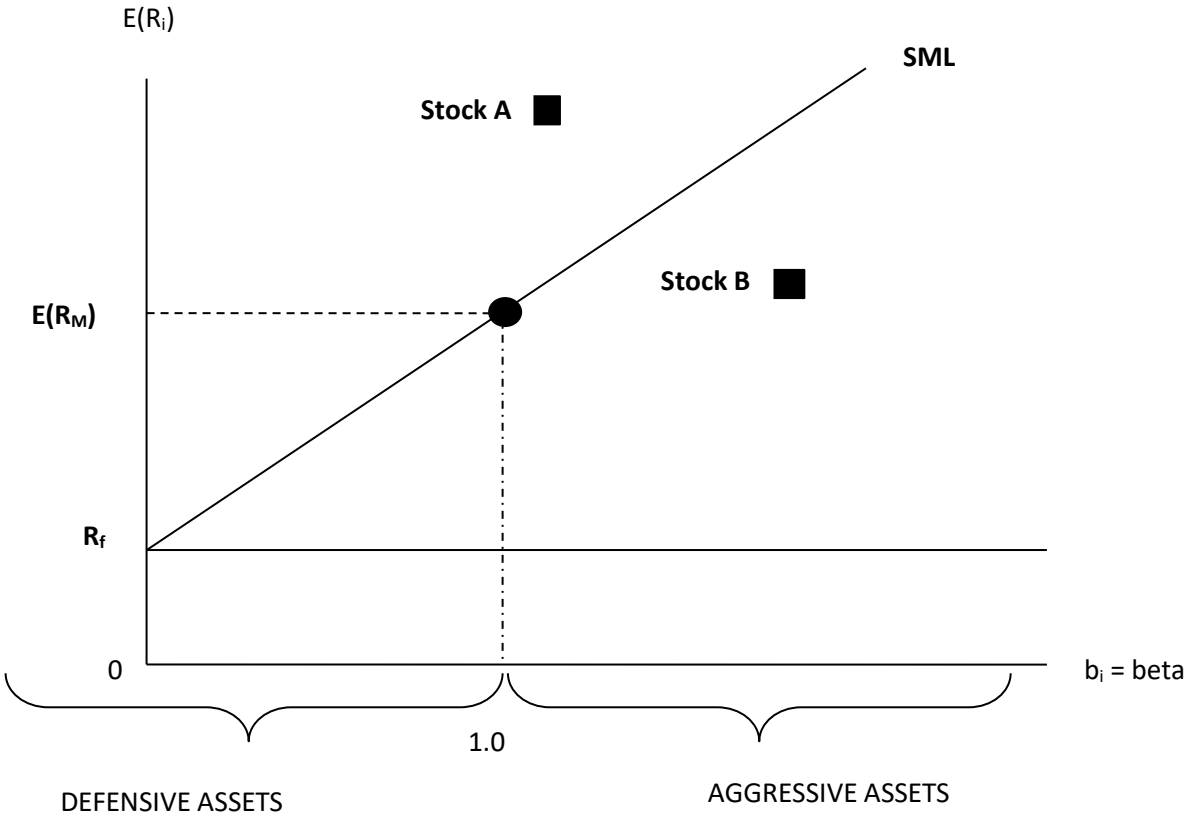
The capital assets pricing model is develop in a hypothetical world where the following assumptions are made about investors and the opportunity set.

i. Investors are risk averters. So when they are given two alternative portfolios they will choose one having higher expected return lower standard deviation.
ii. Investor evaluate portfolio by looking at the expected returns and standard deviation of the portfolio over a one period horizon.

iii. Capital markets are highly efficient so that all investors get market information at no cost.
iv. Individual security can be divided infinitely and can be bought in fraction as well.
v. No transaction cost occurs in the capital market.
vi. There is a risk free rate at which an investor lends or borrows money. The risk free rate is same for all investors.
vii. No investor is able to affect the market price of securities.
viii. Taxes & transactions costs are irrelevant.

Investors have homogeneous expectation meaning they have the same perception in regard to the expected returns, standard deviations, and covariance of Securities
"The major implication of the CAPM is that the expected return of an asset will be related to a measure of risk for that asset known as beta (ß). The exact manner in which expected return and beta are related is specified by the CAPM. The model provides the intellectual basis for a number of the current practices in the investment industry." (Sharpe, Alexander & Bailey, 1996, 261-262)In summary, CAPM expresses the relationship between an asset s return and its systematic risk. The relevant risk for an individual asset is systematic risk (or market-related risk) because of non-market risk can be eliminated by diversification.
The CAPM is an equilibrium model for measuring the risk return tradeoff for all assets including both inefficient and efficient portfolio. The security market line (SML)clearly shows that return is the increasing function, in fact a linearly increasing function of risk. Furthermore, it is only market risk that affects return. The investor receives no added return for bearing diversifiable risk.

Figure 2.3.1(a) Capital Assets Pricing Model (CAPM)

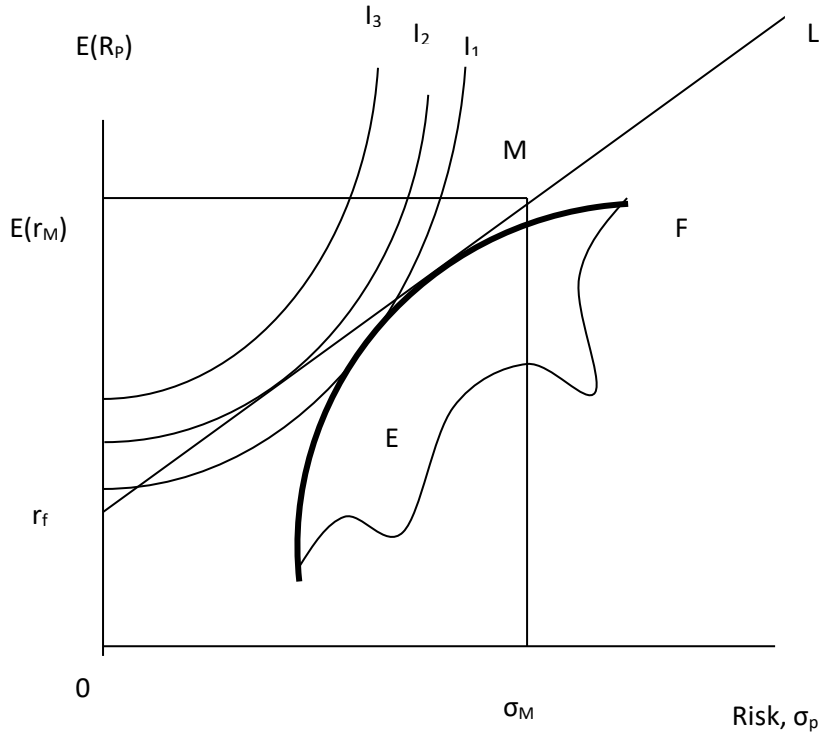


The figure 2.3.1(a) CAPM relates an expected return to each of the systematic risk. These expected returns can be interpreted as the appropriate discount rates, as the cost of capital, or as equilibrium rate of return that investors expect for that amount of systematic risk. In the figure, stock A and stock B are not in equilibrium on the CAPM. Stock A is undervalued and therefore desirable to own the asset. The price of stock A will rise in the market as more investors purchase it. When price goes up of Stock A, its return falls. When Stock A, return falls to the return consistent with its beta on the SML, equilibrium is attained. The Stock B is overvalued. Investors will attempt to sell Stock B, and therefore puts the downward pressure on Stock B price. When the return on Stock B increases to the rate that is consistent with the beta risk level given by the SML, equilibrium will be achieved and downward price pressure will cease. Hence, the CAPM or SML is relationship in which the expected rate of return of the individual asset is a linear function of that asset s systematic risk as represented by beta (ß), symbolically. According to Sharpe & Litner (CAPM) study: the greater the beta of a security, the greater the risk and the greater the expected return required. The lower the beta, the lower will be the risk.

2.3.2. Capital market line (CML):

Capital market line shows the market equilibrium trade-off between risk and return of a portfolio. The market also offers opportunities to borrowing and lending. Incorporating these possibilities in the formation of portfolios gives rise to capital market line. When we introduce risk- free assets in to Markowitz portfolio analysis, given the above assumptions, the efficient frontier is changed from a curve to a straight line. The new efficient frontier is called a Capital Market Line.

Figure 2.3.2(a) Capital Market Line (CML)



The CML starts with the risk free assets r_f and is tangent to the risky portfolio M on the Markowitz efficient frontier. Portfolio M is the only risky portfolio.
To the left M, investor on the CML will hold both the risk free assets and the risky portfolio. Since these investors are holding part of their investment in r_f, they are lending at the rate of risk free. The entire portfolio on the line between r_f and M represents lending port folio.
To the right of M, investors are borrowing at r_f and investing more in M they are utilizing leverage. Portfolio M is called the market portfolio and contains all assets. All portfolios on the line between M and L represents borrowing portfolio. The rf ML represents the risk return trade-off for efficient portfolios. It shows that capital market equilibrium relationship between risk and return for efficient portfolios consisting o f various combination of the risk free assets and the market portfolio. If the investor are to invest in risky securities they must receive a risk premium [E(Rm)-Rf] to compensate for the added risk. Risk premium is an excess return over the risk free rate, expected for incurring the risk associated with the market portfolio, σ_M

The equation of CML is as follows:

$$\textbf{Slope of CML} = r_f + \frac{[E(r_m)-r_f]}{\sigma_M} \times \sigma_p$$

2.3.3 Security market line (SML):

The SML is the relationship between the required return on individual assets and their risk as measured by beta. According to the security market line equation the required rate of return on the security j is an increasing function of beta coefficient (β_j). higher level of non diversifiable risk causes higher required return on the security and vice-versa. Using the value of β_j we can write the SML equation as

$$E(R_j) = Rf + [E(Rm)-Rf] \frac{Cov(R_j,R_m)}{Var(RM)}$$

Further by substituting **$Cov(R_j,R_m)$ with $\rho_{jm}\sigma_j\sigma_m$ and re writing Var(Rm) as $\sigma^2 m$, SML equation can be written as**

$$E(R_j) = Rf + \left(\frac{E(Rm)-Rf}{\sigma_m} \right) \rho_{jm}\sigma_j$$

Here the market price of risk $\frac{E(Rm)-Rf}{\sigma_m}$, is same for both CML and SML and if the correlation coefficient between securities return and market return were perfectly positive ($\rho_{jm} = 1$), the equation for SML and the equation CML would be the same. However, the CML is used to provide required rate of return on those port folio which are efficient and perfectly correlated with the market port folio. But, the SML provides required rate of return for individual securities irrespective of their in efficiencies.

2.3.4 Portfolio performance measure of risk and return

Portfolio construction can be viewed as a matter of selecting securities to include in a portfolio and then determining the appropriate weighting: proportional representation of the securities in the portfolio. The Markowitz model indicates that the proper goal of portfolio construction should be to generate a portfolio that provides the highest return at a given level of risk or the minimum risk at a given level of return. A portfolio having this characteristic is known as an efficient portfolio.

Expected return on portfolio:

The expected return on port folio, $E(R_p)$ is simply the weighted average of the expected returns on the individual assets in the port folio with the weights being the fraction of the total portfolio invested in each assets.

$$E(R_p) = \sum_{i=1}^{n} W_i E(r_i)$$

Portfolio risk:

Portfolio risk is measured by a statistical tool standard deviation and variance. It is the function of the proportions invested in the components. The riskiness of the components and correlation of the returns on the components securities. This risk is computed by using the following equation.

$$Var(r_p) = \sum_{i=1}^{n} \sum_{j=1}^{n} W_i W_j Cov_{ij} \quad OR \quad Var(r_p) = \sum_{i=1}^{n} \sum_{j=1}^{n} W_i W_j \rho_{ij} \sigma_i \sigma_j$$

Covariance:

Covariance is a measure of the degree in which two variables "move together" over time. A covariance between the rates of return for the assets that is positive indicates that the rate of return tends to move in the same direction at the same time. And the negative covariance indicate the rate of return of assets tend to move in the opposite direction and the zero value of the covariance means there is no relationship between two assets at all. The covariance between assets return can be calculated by using the following equation.

$$Cov_{AB} = \sum_{j=1}^{n} [r_A - E(\bar{r}_A)][r_B - E(\bar{r}_B)] P_j \quad \text{——————} \quad \textbf{if probability is given}$$

$$Cov_{AB} = \frac{1}{n} \sum_{t=1}^{n} [r_A - \bar{r}_A][r_B - \bar{r}_B] P_j \quad \text{——————} \quad \textbf{if probability is not given}$$

Correlation:

The correlation is also a measure of the relationship between two assets. Its values are limited between the range of +1 and -1. Correlation and covariance are related by following equation:

$$P_{ij} = \frac{Cov_{ii}}{\sigma_i \ \sigma_j} \quad \text{and} \quad Cov_{ij} = \sigma_i \sigma_j \rho_{ij}$$

Conditions for correlation

Perfect positive correlation (ρ_{ij}=+1) the two perfectly positive correlated stocks move up and down together and a portfolio consisting of two such stocks would be exactly as risky as the individual stock.

Perfectly negative correlation (ρ_{ij}=-1) the two perfectly negative correlated stocks would move perfectly together but exactly in opposite direction. In this condition, risk can be completely eliminated. This condition does not exist in the real world.

No relation between returns (ρ_{ij}=0) the two stocks is exactly zero, there is no relationship between the returns, they are independent of each other. In this condition some risk can be reduce.

Intermediate risk (ρ_{ij} =+0.5) on the average the returns on two stocks would lie on the range of +0.4 and +0.75 under this condition combining stocks into portfolios reduces risk but does not eliminate it completely.

Minimum risk portfolio

The port folio with the lowest level of risk in the efficient frontier is called minimum risk portfolio. It is also called risk minimizing weight. In two stock port folios, the optimal weight to invest in stock i and j are calculated as follows:

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_j = 1 - W_i$$

Where,

W_i = optimal weight to invest in stock i

W_j = optimal weight to invest in stock j

2.3.5 Risk adjusted performance measure:

The three great scholars/academicians namely William Sharpe, Jack Trey nor and Michael Jensen reconised immediately the implication of theCAPM for rating the performance of investment portfolio. Hence, some risk adjusted performance measures are:

Sharpe's measure(S_i) = $\dfrac{\overline{r_i} - \overline{R_f}}{\sigma_i}$

Where,
S_i = Sharpe's index of portfolio performance.

$\overline{r_i}$ = average return on portfolio 'i' during a specific time period

$\overline{R_f}$ = average risk free during same time period.

σ_i = standard deviation of portfolio 'i'

Treynor's measure (T_i) = $\dfrac{\overline{r_i} - \overline{R_f}}{\beta_i}$

$\overline{r_i}$ = average return on portfolio 'i' during a specific time period

$\overline{R_f}$ = average risk free during same time period.

β_i = the slope of the fund's characteristic line during that time period (i.e portfolio's beta coefficient)

Jensen's portfolio measure, this measure is based on CAPM.

$E(r_i) = R_f + \beta_i [\overline{r_m} - R_f]$

Where,

$E(r_i)$ = the expected on portfolio or security i

R_f = one period risk free rate of return.

β_i = the systematic risk coefficient (beta) for security or portfolio i

$\bar{r}_m$ = the expected return on market portfolio.

The three port folio performance measures are meant for the same objectives, i.e. measuring performance of portfolio and thus rank them accordingly
It is necessary to compare these performance measures and explain the difference in ranking if any.
The Sharpe's portfolio performance measure uses the standard deviation of returns as the major of total risk, where as Treynor's performance measure and Jensen's performance measure use beta (systematic risk coefficient). The Sharpe's measure, evaluates the portfolio on the basis of both rate of return performance and diversification.
For a complete diversified portfolio, one without any unsystematic risk, the Sharpe's and the Treynor's measure give identical (non-conflicting) rankings because the total variance of the completely diversified portfolio is its systematic variance. However, a poorly diversified portfolio could have high ranking on the basis of the Treynor's performance measure but a much lower ranking on the basis of the Sharpe's performance measure. Therefore, any difference in rank would come directly from a difference in diversification.
Therefore, these two performance measure provide complementary yet different information, and both measure could be use. If we are dealing with a group of well diversified portfolio as mutual funds are Sharpe's and Treynor's measure provided similar. Like, the Treynor's measure, the Jensen's measure does not directly consider the portfolio diversification because it calculates the risk premium in terms of systematic risk. Hence, Jensen's analysis of mutual fund performance showed that a complete diversification was a fairly reasonable assumption.

2.4. Review of related studies

Prof. Dr. Vijay Pal Chatarjee mentioned some guideline to select optimal portfolio. He mentioned that investor like high-expected return for given level of risk is efficient portfolios. If an investor wants to know the marginal impact of the stock on the risk of the portfolio, then he/she must not looks at the risk of that stock in isolation but rather at its contribution to portfolio risk. That is dependent on the stocks sensitivity to changes in the value of the portfolios. If the investor can borrow and lend at the risk free rate of interest, then they should always hold a mixture of the risk free investment and one particular common stock portfolio. The composition of this portfolio depends on when the investment liquidated. Risk is lower in the short term. Diversification of the portfolio can reduce the unique risk. If such diversification results an expected portfolio return or risk level that is below/above the desired level then, then borrowing and lending can be used to achieve the desired level. Portfolio strategy should be mould according to the need of each individual investor. Since each portfolio provides an expected return based on particular level of risk, while constructing portfolios, care should be taken to ensure that the portfolio does not exceed the risk bearing capacity of the investor. It is constructed in such a way that it provides the highest return for a given acceptable level of risk.

Mukund Kumar Shrestha (2002) in his article, "Changing investment portfolio of Rastriya Bema Sansthan", attempted to analyze the investment portfolio holding pattern and its effects to financial performance of R.B.S. He found the dominant part for total volume of investment portfolio in development bonds of HMD/N and a very negligible figure of total investment in share of other companies. Due to this fact, the contribution of income from development bound to total incomes from the portfolios is dominant part. The creation by a sound investment project is very crucial to R.B.S. to minimize return rather than always taking same trading policy of investing in government securities, fixed deposits, certificates and others. But the time has come for the Sansthan to cope with increasing competition to tap profitable investment opportunities by taking initiating in new industrial ventures for encouraging capital formation in the country.

Radhe Shyam Pradhan(2003) has explained the effect of dividend payment and retained earnings on market price of share in the context of Nepalese companies. This article is based on the pooled cross section data of 29 companies from 1994 to 1999 with total of 93 observations. The results of the models of this study have shown that dividend has the strong effect on the market price of the share and less effect of retained earnings. Moreover, this study found that dividends are relatively more attractive to Nepalese stockholders. This paper is useful for those students pursuing the research project on impact of dividend policy on the market price of the share.

Dr, Pradhan (2002) has focused the legal framework of financial distress and the extent of financial distress of Nepalese enterprises and movement of selected financial ratios with the financial distress. This paper is based on the study of more than 90 percent of public enterprises in operation during the late nineties. The time horizon of the secondary data included in this study is 3 years—fiscal year 1996/97 through 1998/99. Defining occurrence of loss as the financial distress of public enterprises, this paper has regressed, the net profit ratio and return on equity, on operating expenses ratio, liquidity ratio, turnover ratio, labor productivity and debt coverage ratio of public enterprises. The results have shown the negative relation of net profit ratio with operating expenses and positive relation with liquidity, turnover, labor productivity, and interest coverage. And finally it has concluded that Nepalese public enterprises were suffering from financial distress during the study period.

Radhe Shyam Pradhan (1994) has presented the results of the survey of financial management practices in Nepal. Based on the survey of 24 public enterprises and 54 private enterprises in Nepal, this article presents the issues relating to finance functions, sources and types of financing, debt ratios and debt limits, sensitivity analysis of financing preferences, tax and distress effects, dealing with the banks and dividend policy of public and private enterprises in Nepal. The article has mentioned the working capital management as the most important finance function and maintaining the good relationship with the stockholders as the least important one. This paper may be instrumental to those researchers who are intending to conduct the survey on finance functions in Nepalese enterprises.

Dr, Pradhan (1993)'s study is based on the pooled cross sectional data of 17 enterprises listed in Stock Exchange Centre and has examined the relationship of market equity, market value to book value, price earnings and dividend with liquidity, leverage, profitability, asset turnover, and interest coverage. It has concluded that larger stocks have larger price-earnings ratios, larger ratio of market value to book value of equity, lower liquidity, lower profitability, and smaller dividends, and stocks with higher price-earnings ratios have lower liquidity, higher leverage, lower profitability, lower turnover,

and lower interest coverage.

R.S. Pradhan (1992) provides the behavioral evidences from 63 executives of Nepalese industries on the appropriateness of the choice of variables of prediction of financial distress. Pradhan has used 14 financial ratios: quick assets to current liabilities, current assets to current liabilities, cash to current liabilities, total debt to total assets, income to sales, working capital to total assets, sales to average inventories, net income to net worth, current assets to total assets, cash flows to sales, sales to total assets, cash flow to total debt, cash flow to total assets, and EBIT to fixed interest charges, as the indicators of financial distress. In this study he has concluded that executives of Nepalese enterprises perceive that short term liquidity ratios are the most important indicators of the financial distress. Moreover, he concluded that there is no significant difference between the choices of financial ratios by the private enterprises and public enterprises in Nepal.

Dr. Pradhan (1992) study is also based on the survey of 63 executives from private and public sector enterprises. In this article, author has investigated into major aspects of financial distress in Nepalese context. These aspects include causes of financial distress, symptoms of financial distress, policy measures to be adopted to rehabilitate industries under financial distress, and suggestions for industrial units under financial distress. Author has concluded that the major causes of financial distress are frequent changes in government policy, problem of raw materials, power and skilled labor, and poor management. In addition, he has concluded that Nepalese executives perceive the decline capacity utilization, decline in the quality of products and services as symptoms of financial distress.

Dr. Pradhan (1994) has investigated into the transaction demand for the inventories, and effect of capital cost on inventory holdings of manufacturing public corporation of Nepal. The study has covered twelve years data (from 1973 through 1984) of nine corporations. This study has shown the presence of economies of scale with respect to demand for inventories and demand for inventories is the function of sales and inventory holding costs of the corporations. But the question on the validity of the conclusion of this study rises due to the small numbers of study unit. However, it may be valuable sample for further study.

Dr. Pradhan (2002) focuses on the role of saving, investment and capital formation in economic development of Nepal. The study has covered 27 years, from fiscal year 1974/75 through 2000/01. This article is based on the macro-economic variables like saving, investment, gross domestic products and capital formation. The study has found the significant association of gross domestic product with the saving, investment and capital formation both at current price and real terms. The major implications of the results of this study are the positive impact of saving, investment and capital formation on the economic development, current value of these explanatory variables have larger impact on economic development than that of the past values, and strong role of saving and capital formation in the economic development of the country. The ninth article is related to the dividend policy and practices of Nepalese enterprises and coauthored with Nav Raj Adhikari. This is based on the survey of the views of 135managers on dividend policy of 50 large Nepalese enterprises, but the article has not mentioned when the survey was carried out. This study found that the managers give the third priority to the dividend decision in the large Nepalese enterprises; cash dividend is paid to communicate the shareholders that their companies are doing good; majority of the managers do not conceive the dividend decision as a residual decision; announcement of earnings of the companies help to push up the market price of the share; and corporations distribute the stock dividend to conserve cash. Regarding the factors affecting the dividend policy, this

study has concluded that managers of Nepalese enterprises assign the first priority to earning, second priority to availability of cash, the third to past dividend, fourth to concern about maintaining or increasing stock price.

Dr. Pradhan (2003) study is based on the time series data of nine manufacturing public enterprises. Author has estimated the demand for cash equations with pooled data consisting of 90 observations. The estimated pooled regression results have showed the presence of the economies of scale with respect to the demand for cash. Further this study has shown that the demand for cash is the function of both sales and holding cost of cash. Physical appearance and quality of paper and printing are not so bad but it is not up to the marks.

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Asia – pacific Journal of Risk and insurance, 2009, vol. 4 issue

They point out that some measure intended to provide quick relief and remediation after catastrophic events may have the long term effect of increasing aggregate exposure to such events. In some cases these adverse long-term effect can be mitigated (2009).

OECD Journal (2011) study Financial Market trends to provide regular update of trends and prospect in the international and major domestic financial market area and beyond it provides timely analysis and background information on structure issue and development in financial sector focusing on are where changes are most substantial. Topics including financial market regulation, bonds markets and public debts management, insurance and private pensions as well as financial statistics.

Insurance Regulatory and Development Authority (IRDA) is a national agency of the government on India, based in Hyderabad. It was formed by an act of Indian parliament known as IRDA Act 1999, which was amended in 2002 to incorporate some emerging requirement. Mission of IRDA as started as stated in the act is "to protect the interests of the policyholders, to regulate promote and ensure orderly growth and ensure orderly growth of the insurance industry and for matters connected therewith or incidental there.

Insurance Regulatory and Development Authority (IRDA) was constituted in 1999 by an Act of parliament to protect the interest of the policyholders and to regulate promote and ensure orderly growth of the insurance industry. IRDA consists of the ten member's team that comprises a chairman five hole-time members and four part-time members. IRDA allows registration of new players in the insurance field. It also has the authority to renew, modify, withdraw, suspend or cancel such registration. IRDA ensures protection of the interests of the policyholders in matters concerning assigning of policy, nomination by policyholders, insurable interest, settlement of insurance claim, surrender value of policy and other terms and other terms and conditions of contracts of insurance. It specifies requisite, qualifications, code of conduct and practical training for intermediary or insurance intermediators and agents. After creation of IRDA, insurance sector has been tremendous growth. Before IRDA came in to force there were only players in the insurance field, namely life insurance corporation of India(LIC) and General insurance corporation of India(GIC).Since then 23 new players have entered in the insurance sector.

Elyas Elyasiani in the year 2004, 44 has used the Multivariate Generalized Autoregressive Conditionally Heteroskedastic (GARCH) method by taking daily data from January 4, 1988 to December 29, 2000 and data are sorted into three portfolios –the Money Centre Bank, the Large Bank and the Small Bank portfolios and drawn the conclusion as "The study examines the effect of interest rate volatility on bank stock returns and risk. Volatility in financial markets is generally overlooked in bank asset

pricing models as a factor influencing bank stock returns and/or stock volatility. However, according to the results reached volatilities, as measured by volatilities of the short-term and long-term interest rates, do play a considerable role in determining the distribution of the bank stock returns, with the direction of the effect being model dependent. Specifically, fluctuations in the long-term interest rate volatility are found to increase bank stock return volatility. Hence, the use of a miss specified model may subject the direction and the magnitude of the interest rate effect to error and may misguide investors in bank stocks, as well as bank managers and policy makers. The overall results seem to be more plausible in the second model, which uses the long-term interest rate level as an argument in the mean return equation. Determination of the appropriate interest rate in the bank asset pricing model through a formal model selection procedure is a logical next step in addressing the issues of concern.

Shyam K. Shrestha (2001) in his article, "Research in Nepalese Finance" ,stated that there is a no doubt insurance plays a vital role in the development of economy. It gives security to the insured and collected the resources and mobilizes it. To highlight the importance of insurance business Dr. Shrestha says that insurance plays the important role in trade and commerce. He specially focuses to the role of insurance is more sensitive in export marketing through his article. According to his views the role of insurance is more sensitive in export marketing and international trade to protect the risks and foreign exchange fluctuation risk etc. It is absolutely true that export trade is more risky that domestic trade. Generally as an exporter, he should be familiar with these risks involved in his trade. At last, he states that if the exporters are not aware of their facts they may have to face domestic exporters from exports risks by providing adequate insurance services to them, as they required. This would help a lot in the promotion of the country's export trade and to strengthen the country's balance of payment.

"Financial economics is defined by Smith (1996) as the „application of economic theory to financial markets . It is a large body of theory including such well-known models as „Modern Portfolio Theory of Markowitz (1952), the CAPM of Sharpe(1964), „The efficient market hypothesis of Samuelson (1965), Fama (1965) and the„ Option Pricing Model of Black & Scholes (1973). Although these models are all ncluded in institutes of faculty education ltd 1995, their acceptance or use is controversial." (Howie, 1997, 99).

2.4.1 Review of thesis:

Rabindra Shrestha ,"Dividend Policy of Insurance Companies in Nepal". Master thesis, (2063) had carried out thesis word on" Dividend policy of insurance companies in Nepal". His main objective of study was to analyze the dividend policy of insurance companies in Nepal. The specific objectives were to analyze the impact of dividend per share on market price of stock, to determine the determinants of dividend policy of Nepalese insurance companies, to analyze the target payment ratio of the Nepalese insurance companies. To analyze this objective he had used EPS, DPS, Dividend in percent , DPR, Price earnings ratio, Earning yield, Dividend yield ,Market value per share, pooled average (financial tool), and Multiple regression(statistical tool).Major findings of his study were earning power and dividend paying capacity of insurance companies were deteriorating year by year. The insurance companies did not care their

growth rate, liquidity position and profitability while designing the dividend policy. The Nepalese insurance companies had a low target payout ratio.

Govinda Sunar, submitted "A Comparative Study on Dividend Policy of National Life and General Insurance Company Limited and Everest Insurance Company Limited.," Master thesis (2003) Sunar submitted a thesis on the topic of "A Comparative Study on Dividend Policy of National Life and General Insurance Company Limited and Everest Insurance Company ". His objectives were, to examine the influence of financial indicators on share price. to show the relationship between dividend per share and other financial indicator, to check the consistencies among DPS, EPS, D/P ratio etc of the sample Ted insurance companies, to identify the dividend policy undertaken by each company and the appropriateness of the policy under taken, to provide useful suggestion to formulate optimum dividend policy and maximum stock price on the basis of finding. He was used both statistical and financial tools as the course of his study. The major finding of the study regarding the dividend policy, which needs potentiality to improve the dividend policy of the insurance companies and to rise in the value of share by maintaining amicable relation with shareholders.

Ramesh Raj Bhattarai had prepared thesis on "A study on prospect of Life insurance business in Nepal"(1978). His basic objective of the study was to find out the extent of popularity of life assurance business in Nepal. Other objectives were to analyze the present situation of life assurance business in Nepal with a view of finding out the prospect of this business in future, to suggest suitable marketing promotion measures, to analyze the income and number of life policy in force relationship by testing the hypotheses and examine its popularity to date in the country, to analyze and interpret the various ratio to see the financial position of the Life Insurance Department and to draw some conclusions about its trend. On the course of his study he had used financial tools like current ratio, debt to equity ratio return on shareholders' investment and return on equity capital etc. His major findings of his study were Life assurance business was increasing day by day. Its market was not developed, as it ought to be due to low income of people and the infancy stage of corporation. The future of the corporation is purely depends upon the materialization of the business through its agent because the agent are the direct link between the corporation and the people. He suggested to promote life insurance business from rural area also and to utilize the fund in attractive area like business industry and agriculture sector by which it can make high rate of return.

Umesh Raj Rizal, "Diagnosis of Financial Health of Himalayan General Insurance Co. Ltd. Master thesis. (2063). Rizal had submitted the thesis on "Diagnosis of financial health of Himalayan general insurance company Ltd. in the framework of IRDA". His fundamental objective of the study is to diagnose the financial health of HGI. The specific objectives of the study were to analyze the trend in gross premium, shareholder's fund growth rate and expenses of management in HGI, to measure the pattern in risk and premium retention, commission, technical reserves and reinsurance in HGI, to examine the profitability pattern of HGI. In order to achieve the objective, he had used descriptive and analytical research design. The analytical research design was used to access and analyze the financial indicators of HGI. The descriptive design had used to explore and find out the existing condition and necessary suggestion in solving the basic problem

encountered by the company. Major findings of his study were HGI and insurance industry were growing in terms of gross premium. Shareholder's fund is in growing trend from 1993/94 to 2004/05 except 2001/02.General reserve was in growing trend. The technical reserve to net premium ratio showed the reserve amount set aside for future unexpected events. The underwriting balance ratio measured the profit/loss in comparison to net premium. Operating profit ratio was positive throughout 1993/94 to 2004/05. Net profit was in increasing trend throughout the study period except 2001/02and 2004/05. Net premium was growing continuously etc.

2.5 Research Gap

As we know that research means to carry out the real problem on the particular field on a particular topic. Regarding the objectives I had selected the topics of this thesis. In reference to the other dissertations most of them were research only on the overall performance and Investment position of insurance companies. The primarily research work is based upon Risk return analysis, portfolio analysis, portfolio selection criteria, optimal weighted portfolio formulation process and portfolio performance evaluation from the common stock of the selected insurance companies. Concerning the above analysis there is no evidence up-to-date that is carried out regarding above study.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology is a systematic way to solve the research problem. It refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. This chapter is the major part of the study and holds the main important place in the entire research. In this chapter, effort has been made to analyze risk return and portfolio performance behavior of common stock of Insurance companies of Nepal. It refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. In other words, Research methodology describes the method and process to be followed during the research work. This chapter deals with analysis of data collected and their presentation with interpretation using different tools and techniques of analysis Thus, this chapter focuses the research methodology used for the study of dividend policy and practices of selected insurance companies of Nepal.

3.1 Research design:

The study covers quantitative methodology in a greater extent and also uses the descriptive part based on both technical aspect and logical aspect. Though the research tried to concentrate on quite a specified subject area, it could not ignore some other relevant areas of study, which may give further support to the research. The fundamental objective of the study is to analyze the financial performance of the Insurance companies of Nepal. It deals with the study of risk, return and portfolio analysis of insurance companies based on available information. Study covers five years period from F/Y 2005/06 to 2009/10 A.D. As the title of the research suggests, it is more analytical, empirical and less descriptive. It is a controlling media for collection of data and it helps to collect the accurate information, which is related to dividend policy and practices of selected insurance company in Nepal. The study is analytical in the sense that the available data are analyzed by using various statistical tools and techniques such as standard deviation, co-efficient of variation, regression model etc. The study is related with market performance of listed insurance companies and it is based on fully secondary sources of data. Thus descriptive research design has been used.

3.2 Population and sample of data:

The large group about which the generalization is made is called the population under study or the universe. Because of the large group size, it is fairly difficult to collect detail information from each member of population due to lack of time and resource factor, it is not possible to include all of them in the study. Rather than collecting detail information from each number, the small portion is chosen as representation of the population is called the sample. Thus sampling technique is used for selecting the sample of insurance companies from population. The procedure of selection of sample from the population is known as the sampling method. As on Mid July to August 2010, there are 20 Insurance Companies that are listed in NEPSE and out of them, there are five insurance companies,

taken as sample, on the basis of convenience sampling, which is 25% of population. These sample insurance companies of Nepal are Sagarmatha Insurance Co. Ltd, Nepal Insurance Co. Ltd., Premier Insurance Co. Ltd., Himalayan General Insurance Co. Ltd. and Everest Insurance Co. Ltd.

3.3 Nature and Sources of Data:

The research study is mainly based on the secondary data that are available in the published form. The data of the different financial and statistical variables related in this topic have been collected basically from annual report and financial statement of concerned companies Thesis and reports conducted by various degree students relating to the insurance field are also taken as sources. In the same way different books, journals, articles, report, newspaper etc has been collected for the study, other supplementary data and information are obtained from followings: Annual reports Publications of the Nepal Stock Exchange Limited http:// www.nepalstock.com ,Newspaper & Magazines, Security Board Nepal, Nepal Rastra Bank "http:// www.nrb.org.np is accessed for data. Similarly other data are obtained by performing informal discussion with the executive of Insurance companies and management experts of the respective companies. Data from organization like shareholder report, annual report, reviews and reports, report and reviews from SEBO, trading reports of NEPSE, statistics report and annual report of NRB, articles from various magazines, previous thesis and dissertation, homepages, books and journals are also included for study.

3.4 Data collection techniques:

In order to make the study more reliable and authentic, different tools and techniques are used throughout the study. For the reference material, the researcher visited Shankar Dev Campus and Central Department of Management T.U. and Insurance Board (Beema Samiti). Many visits in management department and various sections of central library, T.U led the researcher to be successful in conducting the study. Other literature reviews are collected from the Central Library of TU and Western Regional Library. The collected data were recorded in mater sheet manually then data were entered to spread sheet to work out statistical and financial analysis ratios. These data are also used to prepare figures and tables. To process the data of the present study manual and computer based program were used like Microsoft word and excel Data were not available in readymade format. Data have been processed as per research requirements. First, needed data was assessed. Second, data are collected and only essential data are selected, classified and such a way that they represent qualitative and quantitative glimpse. To process data Computer Application program MS- Office, Professional Edition, MS 2007 were used.

3.5 Data analysis tools:

According to the nature of statement of data, suitable or appropriate tools make the analysis more effective and significant for achieving objective. The data collected from various secondary sources has been analyzed by using various statistical tools and tabulated according to the nature of data and requirement of the study. It has been presented in different tables, figures and charts to trace out the situation of financial performance of listed insurance companies. Hence, the appropriate financial and statistical tools are used in this study for propose of data analysis:

3.5.1Financial tools:

Earnings per share (EPS):

It measures the return of each equity shareholder. It can be calculated by dividing the net profit after tax by the total number of the common shares outstanding. It reveals the earning power of each share over the period (i.e. one year). It is calculated as under.

$$\text{EPS} = \frac{\text{Net profit after tax}}{\text{Number of common shares outstanding}}$$

Dividend per share (DPS):

Dividend refers the percentage of earnings paid in cash to its stockholders. "As long as there are investment projects with returns exceeding those that are required, it will use retained earnings and the amount of senior firm has retained earnings left over after financing all acceptable investment opportunities, these earnings then would be distributed to stockholders in the form of cash dividends, if not there would no dividends" Company pays dividend to its existing shareholders in case of the declaration of only cash dividend, it is easy to calculate dividend amount. DPS is the net distributed profit belonging to the shareholders divided by the number of ordinary shares outstanding. It measures the financial performance of the company. It is calculated as follows:

$$\text{DPS} = \frac{\text{Amount paid to equity shareholders}}{\text{No of ordinary share outstanding}}$$

3.5.2Statistical tools:

Holding period return:

The expected return will be the average of historical rate of return. In term of holding period return, the expected Rate of return for any specific securities is the expected rate of return taken from its historical return. The expected rate of return is the expected after tax increase in the value of initial investment over the holding period. The overall tax of return can be decomposed into capital appreciation and dividend components. Capital appreciation is the difference between investor's end of period price and the beginning of period price. Single holding period return refers to the one year holding period return. Thus, the expected on realized or ex-post rate of return can be calculated as follows:

$$\textbf{Single period rate of return, } r_t = \frac{(price\ change) + cash\ dividend}{purhase\ price\ at\ the\ start\ of\ the\ period} = \frac{(P_t - p_{t-1}) + D_t}{P_{t-1}}$$

Hence, return comes from two sources, income and price appreciation.

Where,

P_{t-1} = starting stock price.

P_t = ending stock price.

D_t = cash dividend for time t.

Expected rate of return:

One of the main aims of the study is to determine the expected return on the investment in common stock. Generally, this rate is obtained by arithmetic mean of the past year s return. Average of historical rate of return, in term of holding period return, the expected rate of return for any specific securities is the expected rate of turn taken from its historical return. The expected return will be symbolically, represented as

$$\text{Expected value, } E(R_j) = \frac{\sum_{t=1}^{n} R_j}{N - 1}$$

Standard deviation:

It is the statistical measure of the variability of a distribution of return around its mean. The standard deviation measures the absolute dispersion. Smaller the standard deviation means a high degree of uniformity of the observation as well as homogeneity of a series. Larger the standard deviation means just the opposite. It is the square root of the variance and measures the unsystematic risk on stock investment.

Symbolically,

$$\text{Standard deviation} = \sigma = \sqrt{\frac{\sum_{j=1}^{n} (Rj - \bar{Rj})^2}{n-1}}$$

Where, σ = Standard deviation of returns on stock j during the time period n.

Coefficient of variance (C.V):

The coefficient of variance is the relative measure of dispersion, comparable across distribution which is defined as the ratio of the standard deviation of returns to the mean of that distribution expressed in percentage. It is calculated by following equation.

Symbolically,

$$CV = \frac{\sigma}{E(R_j)}$$

Beta coefficient (β):

The beta coefficient is an idea of systematic risk. It may be used for ranking the systematic risk of different assets. If beta is large than 1, then the assets are more volatile than the market, which is called aggressive assets. If beta is less than 1, the assets are considered as defensive assets as its price fluctuations are less volatiles than market. On the other hand, if the beta is equal to 1 then the asset is said to be average as its price move proportional to the market changes. Beta of market is always one.

Mathematically, the systematic risk beta is measured as the covariance of the stock returns with the market returns expressed per unit of market variance as follows:

$$\beta_j = \frac{COV_{jm}}{\sigma_m^2}$$ where, β_j = the beta value of security J

σ_m^2 = variance of market

cov_{jm} = covariance between security j and market and

$$cov_{jm} = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{N - 1}$$

Correlation:

The correlation is also a measure of the relationship between two assets. Its values are limited between the range of +1 and -1. Correlation and covariance are related by following equation:

$$P_{ij} = \frac{Cov_{ii}}{\sigma_i \ \sigma_j}$$ and $$Cov_{ij} = \sigma_i \sigma_j \rho_{ij}$$

Conditions for correlation

Perfect positive correlation (ρ_{ij}= +1) the two perfectly positive correlated stocks move up and down together and a portfolio consisting of two such stocks would be exactly as risky as the individual stock.

Perfectly negative correlation (ρ_{ij}= -1) the two perfectly negative correlated stocks would move perfectly together but exactly in opposite direction. In this condition, risk can be completely eliminated. This condition does not exist in the real world.

No relation between returns (ρ_{ij}= 0) the two stocks is exactly zero, there is no relationship between the returns, they are independent of each other. In this condition some risk can be reduce.

Intermediate risk (ρ_{ij} = +0.5) on the average the returns on two stocks would lie on the range of +0.4 and +0.75 under this condition combining stocks into portfolios reduces risk but does not eliminate it completely.

Portfolio returns (R_p):

Portfolio is combination of two or more securities or assets and portfolio return is Simply a weighted average of individual stock returns.

In case of two assets case:

$R_P = W_A X R_A + W_B X R_A + 2COV_{AB} X W_A W_B.$

In case of three assets case:
$R_P = W_A X R_A + W_B X R_A + W_C X R_C + 2COV_{AB} X W_A W_B + 2COV_{BC} X W_B W_C + 2COV_{AC} X W_A W_C$

Where, R_P = Expected return on the port folio
W_A, W_B, W_C are the weight of the port folio of return A, B And C respectively.

$W_A + W_B + W_C = 100\%$ always.

Portfolio risk (σ_p):
It is measured by the combined standard deviation of the standard deviations of individual stock returns. Portfolio risk is measured by a statistical tool standard deviation and variance. It is the function of the proportions invested in the components. The riskiness of the components and correlation of returns on the components securities. This risk is computed by using the following equation.

Portfolio formed by the two securities A and B.

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2Cov_{AB} W_A W_B} = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \rho_{AB} \sigma_A \sigma_B}$$

Portfolio formed by the three securities A, B, and C

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + W_C^2 \sigma_C^2 + 2Cov_{AB} W_A W_B + 2Cov_{BC} W_B W_C + 2Cov_{AC} W_A W_C}$$

or

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + W_C^2 \sigma_C^2 + 2 W_A W_B \rho_{AB} \sigma_A \sigma_B + 2W_B W_C \rho_{BC} \sigma_B \sigma_C + 2W_A W_C \rho_{AC} \sigma_A \sigma_C}$$

Minimum risk portfolio:
The port folio with the lowest level of risk in the efficient frontier is called minimum risk portfolio. It is also called risk minimizing weight. In two stock port folios, the optimal weight to invest in stock i and j are calculated as follows:

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$W_j = 1-W_i$

Where,
W_i = optimal weight to invest in stock i
W_j = optimal weight to invest in stock j

Systematic risk: It gives us the proportion of risk that cannot be diversified away. In other words, it is the out of control of management. So it is called un-diversifiable risk. It can be calculated as follows,

Systematic risk = $\beta i^2 \sigma_m^2$

Unsystematic risk: It gives us the proportion of risk that can be diversified away. In other words, it is the under the control of management. So, it is called diversifiable risk. It can be calculated as follows,

Unsystematic risk = total risk (variance) – systematic risk

Risk adjusted performance measure:

Sharpe's measure $(S_i) = \dfrac{\overline{r_i} - \overline{R_f}}{\sigma_i}$

Treynor's measure $(T_i) = \dfrac{\overline{r_i} - \overline{R_f}}{\beta_i}$

Jensen's portfolio measure, this measure is based on CAPM.

$E(r_i) = R_f + \beta_i \left[\bar{r}_m - \overline{R_f} \right]$

Where,

$E(r_i)$ = the expected on portfolio or security i

$\overline{R}_f$ = one period risk free rate of return.

β_i = the systematic risk coefficient (beta) for security or portfolio i

$\overline{r}_m$ = the expected return on market portfolio

$\overline{r}_i$ = average return on portfolio 'i' during a specific time period

σ_i = standard deviation of portfolio 'i'

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

This chapter is the major part of the study and holds the main important place in the entire research and consists of historical return, average return, coefficient of variation, standard deviation, correlation coefficient and beta coefficient of sampled insurance companies. Beta coefficient of companies is used to measure market sensitivity. The standard deviation is used to measure diversify risk. Similarly, end year return and average return are used to evaluate the return position of sampled insurance companies. It has demonstrated the figures and table to analyze the present data. This chapter deals with analysis of data collected and their presentation with interpretation using different tools and techniques of analysis. In this chapter, effort has been made to analyze risk return and portfolio behavior and performance of common stock of some sampled Insurance companies of Nepal. The analysis of data consists of organizing, tabulating and assessing financial and statistical result. Tables and diagrams are listed to make the result more simple and understandable with reference to the various readings and review of literature. Historical return of samples insurance is calculated by using dividend per share and closing and opening price of sampled insurance companies. This chapter also makes the comparative analysis of return of all five sampled insurance company. This analysis includes financial and statistical indicators, in order to achieve the objectives, which are set in introduction chapter.

4.1 Analysis of data of sample Insurance Companies:

In the course of analysis, data gathered from the various sources and have been inserted in the tabular form according to needed prospective format. The data has been collected from the annual report 2009/010 of SEBO, annual financial report of respective insurance companies, report of NRB and annual report of NEPSE. There are all together 21insurance company listed in Nepal stock exchange and among which five sample insurance companies are taken for study and comparative analysis is done from the result obtained from the calculation.

4.1.1 Sagarmatha Insurance Co. Ltd:

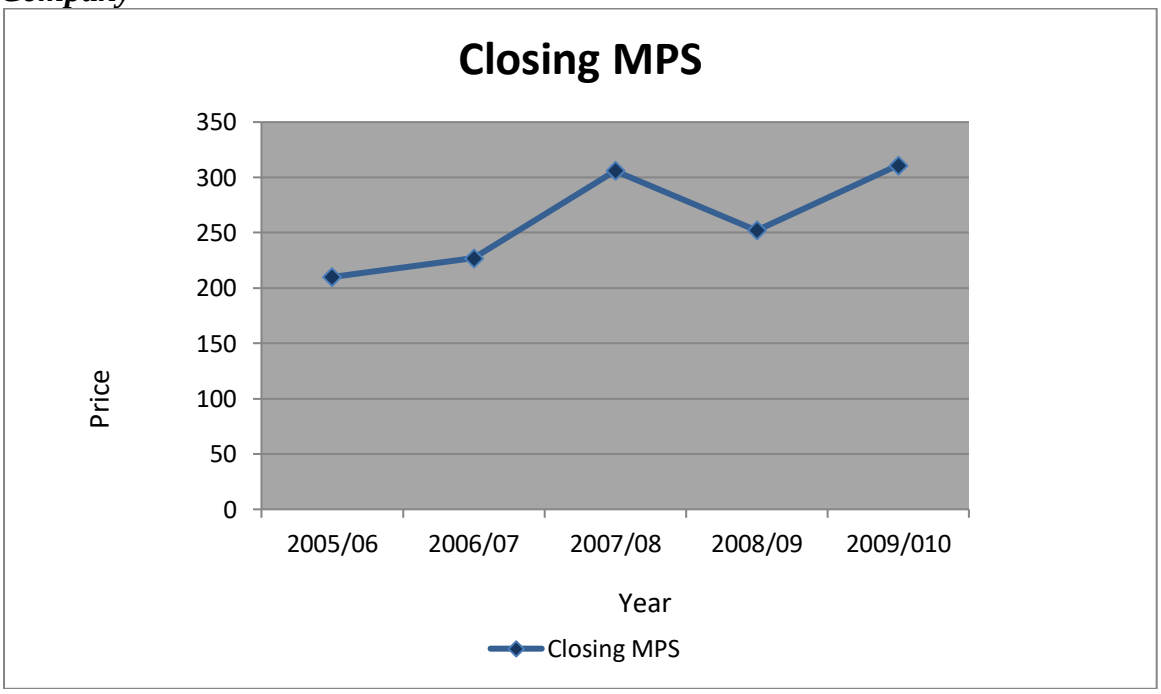
Sagarmatha insurance company was incorporated in 1996 and has been promoted by the prominent entrepreneur and leading industrial groups- salt trading corporation, Golchaa organization, Jyoti Groups, MC Groups, National finance Co. Ltd; Nepal Construction and Engineering Corporation and other promising entrepreneurs. Total no of shares are 1123122 @ Rs 100. Authorized capital of Rs200 million. Issue capital of Rs150 million and Paid up capital of Rs 112.312million.

There are following five years data of Sagarmatha Insurance Company containing high, low, and closing market price per share and total annual dividend paid to share holders are shown in the table 4.1.1(a)

Table 4.1.1(a) Five years MPS and DPS of Sagarmatha Insurance Company

F/Y	High MPS	Low MPS	Closing MPS	DPS	Stock Dividend	Total Dividend
05/06	235	205	210	0	0	0
06/07	227	210	227	0	1:0.25	76.5
07/08	315	287	306	10.68	0	10.68
08/09	295	250	252	10.53	0	10.53
09/010	327	298	311	0	1:0.10	29.8

Fig 4.1.1(a) Year-end price movement of common stock of Sagarmatha Insurance Company



From the figure it is clear that the market price per share of Sagarmatha Insurance Company has started to rise in the fiscal year 2005/06 to 2007/08 and after that market price per share has started to decrease till 2008/09 and then again increases. The lowest market price per share is in the fiscal year 2005/06 and the highest MPS is in fiscalyear 2007/08. The company has distributed stock dividend of 1:0.25, 1:0.333 and 1:0.10 per share in the F/Y2006/07, F/Y2007/08 and F/Y2009/010 respectively. Which causes slightly fall in market price stock .The company has also distributed Cash Dividend of Rs10.68 and Rs10.53 in the fiscal year 2007/08 and 2008/09 respectively.

Table 4.1.1(b) Expected return, standard deviation and coefficient of variation of Sagarmatha Insurance Company

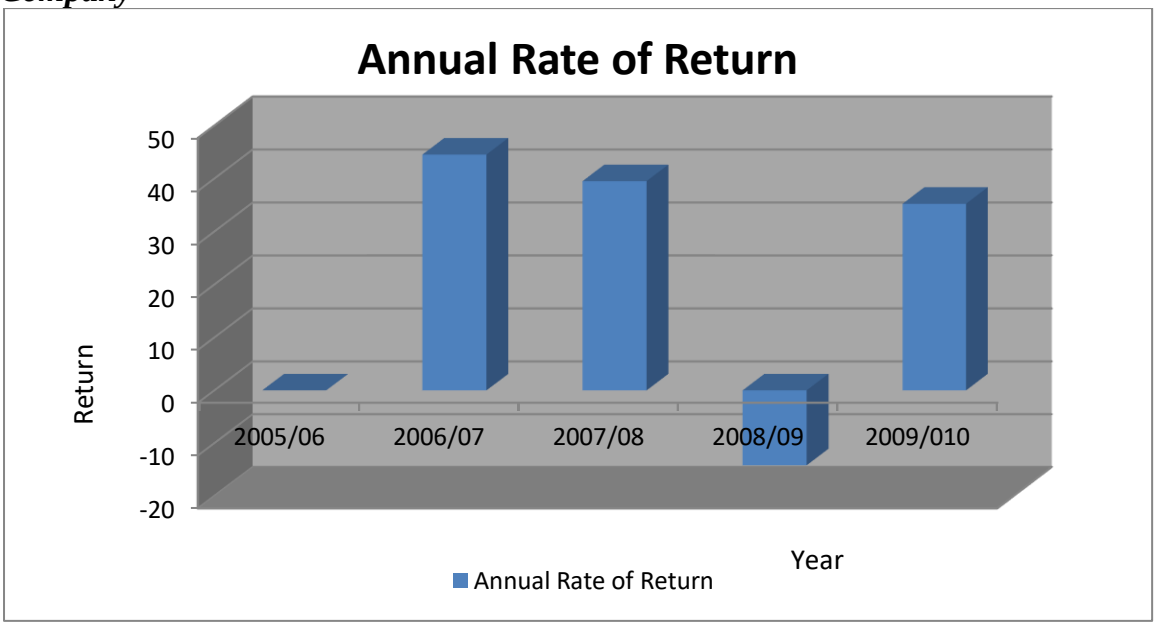
F/Y	Closing MPS	Dividend Per Share	$R\% = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}} X100$	$R - \bar{R}$	$(R - \bar{R})^2$
2005/06	210	0	0	0	0
2006/07	227	76.5	44.52	18.26	333.427
2007/08	306	10.68	39.50	13.24	175.297
2008/09	252	10.53	-14.20	-40.46	1637.0116
2009/010	311	29.8	35.23	8.978	80.604
			$\Sigma R = 105.05$		$\Sigma (R - \bar{R})^2 =$ 2226.339

Expected return $(\bar{R}) = \Sigma R/n = 105.05/4 = 26.262$

Standard deviation = $\sigma = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n-1}} = \sqrt{\frac{2226.339}{3}} = 27.241$

Coefficient of variation (CV) = $\sigma / \bar{R} = 27.241/26.262 = 1.037$

Fig 4.1.1(b) Annual rate of return of common stock of Sagarmatha Insurance Company



In the table 4.1.1(b) mean return of SIC is 26. 262% which is highest as compared to market return of 14.64%. The standard deviation is 27. 241% and coefficient of variance is 1.037. The figure 4.1.1(b) shows the highest return of 39.50% in fiscal year 2006/07 and negative return of -14.20 in the fiscal year 2008/09.

4.1.2 Nepal Insurance Co. Ltd:

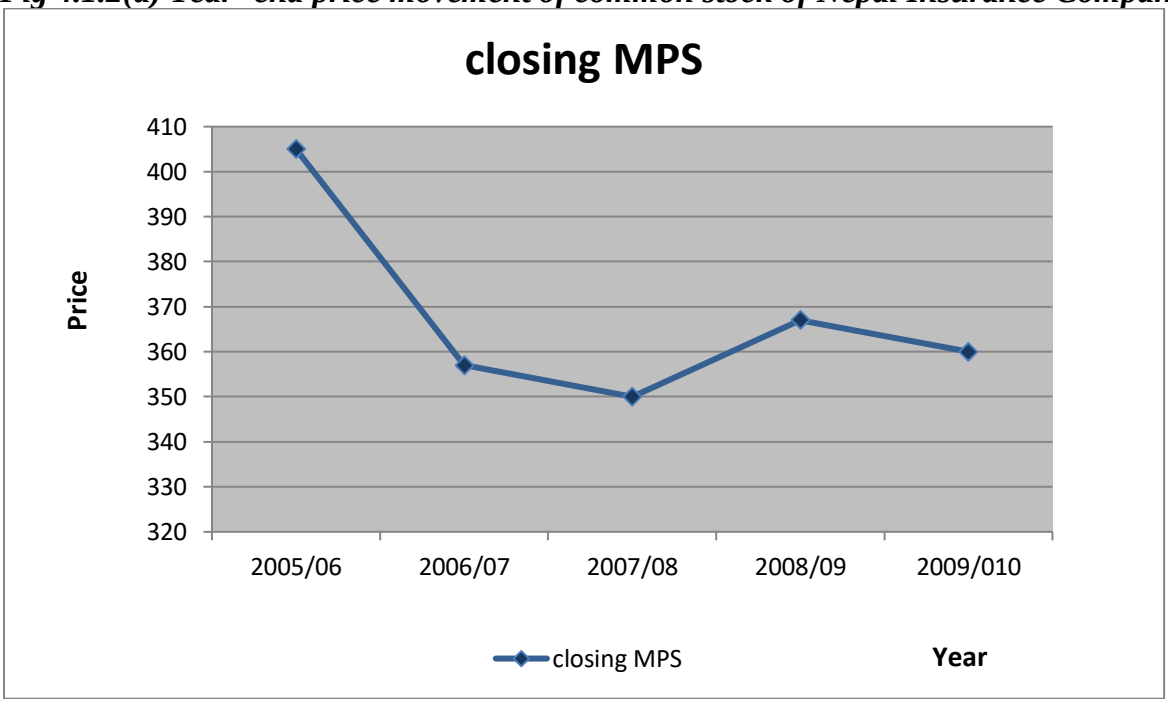
Nepal insurance company was incorporated in the 1947AD and pioneer insurance company of Nepal the company listed in 1984 AD. The company has authorized capital of 150 million, paid up capital of 1026984@ Rs100each. Issue capital of Rs150 million.

There are following five years data of Nepal Insurance Company containing high, low, and closing market price per share and total annual dividend paid to share holders are shown in the table 4.1.2(a)

Table 4.1.2(a) five years MPS and DPS of Nepal Insurance Company

F/Y	High MPS	Low MPS	Closing MPS	DPS	Stock Dividend	Total Dividend
05/06	450	370	405	0	0	0
06/07	400	357	357	0	0	0
07/08	357	345	350	0	0	0
08/09	368	360	367	0	0	0
09/010	360	360	360	54.4	0	54.4

Fig 4.1.2(a) Year- end price movement of common stock of Nepal Insurance Company



From the figure 4.1.2(a) it is clear that the market price per share of Nepal insurance company has raise in the fiscal year 2005/06 and then after started to decrease till fiscal year 2007/08 which is the minimum market price per share and then again increases. The company has distributed cash dividend of Rs 54.4 in the fiscal year 2009/10. The company has not distributed stock dividend in this five year.

Table 4.1.2(b) Expected return, standard deviation and coefficient of variation of Nepal Insurance Company

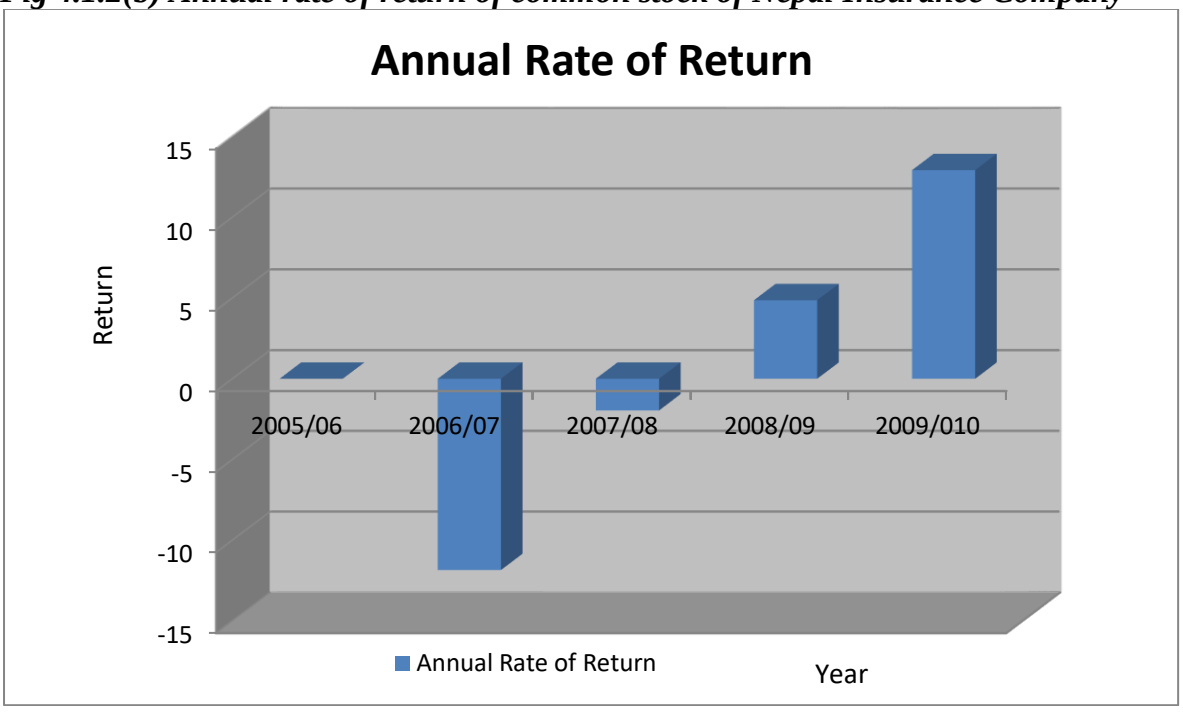
F/Y	Closing MPS	Dividend Per Share	$R\% = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}} \times 100$	$R - \bar{R}$	$(R - \bar{R})^2$
2005/06	405	0	0	0	0
2006/07	357	0	-11.85	-12.84	164.86
2007/08	350	0	-1.960	-2.95	8.7025
2008/09	367	0	4.86	3.87	14.976
2009/010	360	54.4	12.91	11.92	142.086
			$\Sigma R = 3.96$		$\Sigma(R - \bar{R})^2 = 330.624$

Expected return $(\bar{R}) = \Sigma R/n = 3.96/4 = 0.99$

$$\text{Standard deviation} = \sigma = \sqrt{\frac{\Sigma(R-\bar{R})^2}{n-1}} = \sqrt{\frac{330.624}{3}} = 10.497$$

Coefficient of variation (CV) = $\sigma / \bar{R} = 10.497/0.99 = 10.603$

Fig 4.1.2(b) Annual rate of return of common stock of Nepal Insurance Company



In the table 4.1.2(b) mean return of NIC is 0.99% which is lowest as compared to market return of 14.64%. The standard deviation is 10.497% and coefficient of variance is 10.603. The fig 4.1.2(b) shows the highest return of 12.91% in fiscal year 2009/010 and negative return of -11.85 and -1.960 in the fiscal year 2006/07 and 2007/08.

4.1.3 Premier Insurance Co. Ltd:

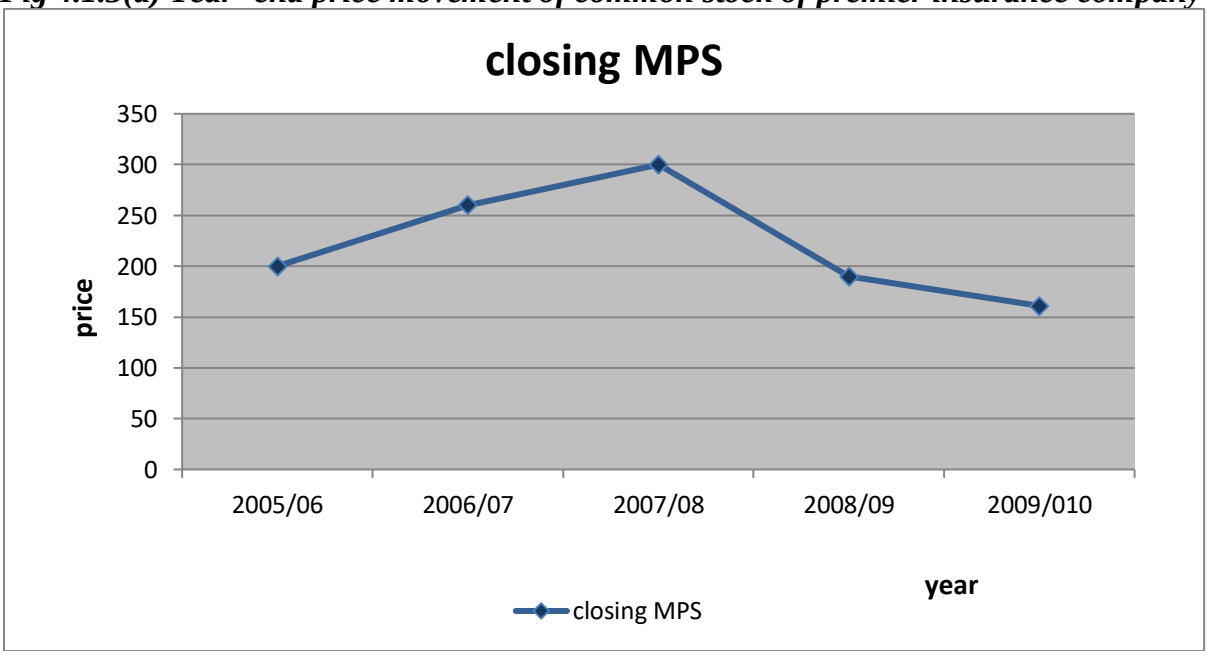
The premier insurance company Ltd Incorporated on 12th may 1994, Premier Insurance Company (Nepal) Limited has emerged as a renowned general insurance company of the second generation. The company has earned a reputation in the local and international insurance and reinsurance sectors as well for its professionalism and services. Premier's success in the insurance and reinsurance business owes itself to the determination of its promoters to succeed. Comprised of prominent entrepreneurs, the promoters of the company have brought their experiences, entrepreneurial talent and leadership skills to add to the company's growth. It has Authorized capital of Rs 200million Issue capital of Rs 120 million and paid up capital of Rs 1.02 million @ Rs100 each, total no of shares 1020000.

There are following five years data of Premier Insurance Company containing high, low, and closing market price per share and total annual dividend paid to share holders are shown in the table 4.1.3(a)

Table 4.1.3(a) Five years MPS and DPS of Premier Insurance Company

F/Y	High MPS	Low MPS	Closing MPS	DPS	Stock Dividend	Total Dividend
05/06	214	190	200	0	0	0
06/07	201	200	260	5.79	0	5.79
07/08	318	260	300	0	1:1.1	209
08/09	191	160	190	10.53	0	10.53
09/010	163	154	161	0	0	0

Fig 4.1.3(a) Year- end price movement of common stock of premier insurance company



From the figure it is clear that the market price per share of premier insurance company has started to rise from the fiscal year 2005/06 till fiscal year 2007/08 which is the maximum market price per share and then started to decrease. The lowest market price per share is in the year 2009/010. The company has distributed cash dividend of Rs 5.79 and Rs 10.53 per share in the fiscal year 2006/07 and fiscal year 2008/09 respectively. The company has distributed stock dividend of 1:1.1 in the fiscal year 2007/08.

Table 4.1.3(b) Expected return, standard deviation and coefficient of variation of Premier Insurance Company

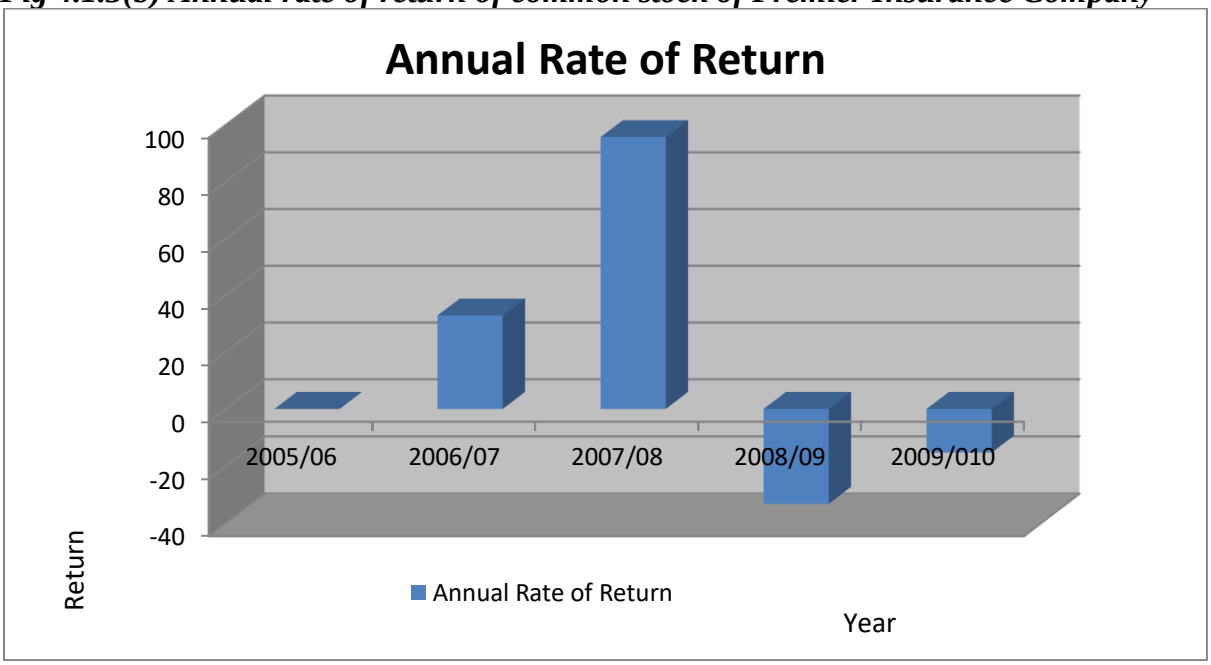
F/Y	**Closing MPS**	**Dividend Per Share**	$R\% = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}} \times 100$	$R - \bar{R}$	$(R - \bar{R})^2$
2005/06	200	0	0	0	0
2006/07	260	5.79	32.89	12.83	164.60
2007/08	300	209	95.76	75.7	5730.49
2008/09	190	10.53	-33.15	-53.21	2831.30
2009/010	161	0	-15.26	-35.32	1247.50
			$\Sigma R = 80.24$		$\Sigma (R - \bar{R})^2 = 9973.89$

Expected return $(\bar{R}) = \Sigma R/n = 80.24/4 = 20.06$

Standard deviation = $\sigma = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n-1}} = \sqrt{\frac{9973.89}{3}} = 57.65$

Coefficient of variation (CV) = $\sigma / \bar{R} = 57.65/20.06 = 2.87$

Fig 4.1.3(b) Annual rate of return of common stock of Premier Insurance Company



In the table 4.1.3(b) mean return of PIC is 20.06% which is highest as compared to market return of 14.64%. The standard deviation is 57.65% and coefficient of variance is 2.87. The fig 4.1.3(b) shows the highest return of 95.76% in the fiscal year 2007/08 and negative return of -33.15% and -15.26% in the fiscal year 2008/09 and 2009/10 respectively.

4.1.4 Himalayan General Insurance Co. Ltd:

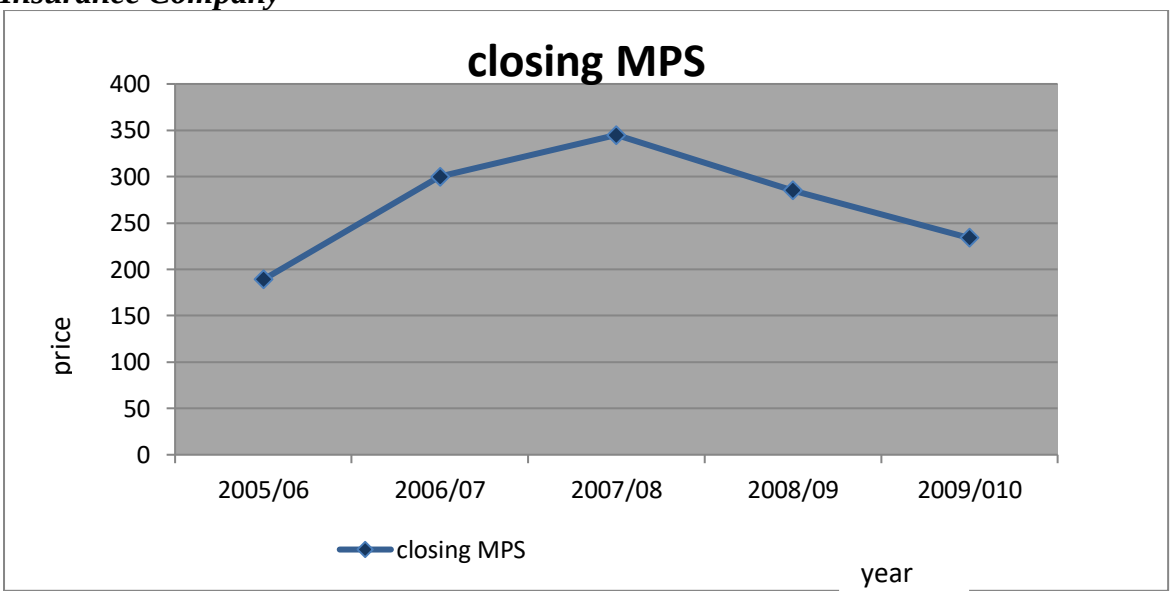
Himalayan General Insurance Company Limited was established in 1988 under the company Act 1964 with an objective of undertaking non-life and re-insurance business in the country and aboard. The company obtained permission to commence insurance business from insurance board under insurance Act 1992 and stated its business from November 1993. HGIC got listed on stock exchange on 1994 A.D. The shareholding pattern of the company is bifurcated as 60% shares owned by promoters and 40% by general public. At the end of fiscal year 2009/10, authorized capital, issued capital and paid up capital were 16millions share@ Rs100 each, Rs 90000000 and Rs100800000 respectively. No of share holders are 1992000.

There are following five years data of Himalayan General Insurance Company containing high, low, and closing market price per share and total annual dividend paid to share holders are shown in the table 4.1.4(a)

Table 4.1.4(a) Five years MPS and DPS of Himalayan General Insurance Company

F/Y	High MPS	Low MPS	Closing MPS	DPS	Stock Dividend	Total Dividend
05/06	215	171	189	0	0	0
06/07	300	198	300	5.79	0	5.79
07/08	348	315	345	5.26	1:1.1	318.76
08/09	270	205	285	10	0	10
09/010	228	202	234	0	0	0

Fig 4.1.4(a) Year- end price movement of common stock of Himalayan General Insurance Company



From the figure it is clear that the market price per share of Himalayan General insurance company has started to rise from the fiscal year 2005/06 till 2007/08 which is the maximum market price per share and then started to decrease. The lowest market price per share is in the year 2005/06. The company has distributed cash dividend of Rs 5.79 and Rs10 per share in the fiscal year 2006/07 and 2008/09. The company also paid stock dividend of 1:1.1and cash dividend of Rs5.26 in the fiscal year 2007/08.

Table 4.1.4(b) Expected return, standard deviation and coefficient of variation of Himalayan General Insurance Company

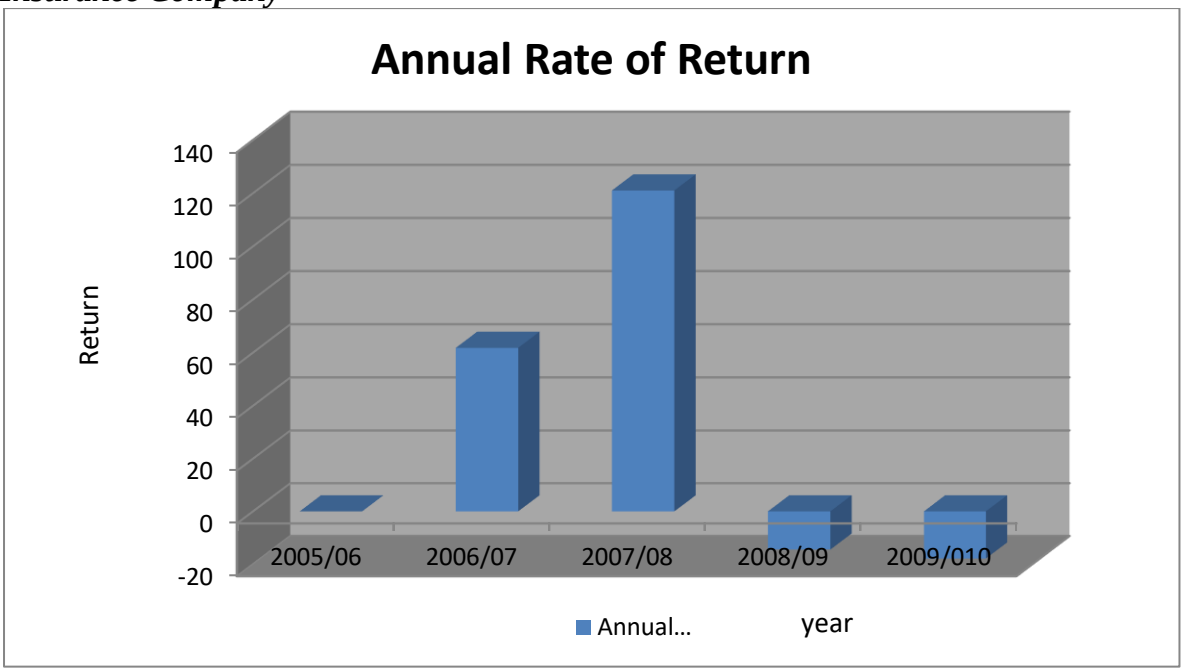
F/Y	**Closing MPS**	**Dividend Per Share**	**R% = $\frac{(P_t - P_{t-1}) + D_t}{P_{t-1}} X100$**	**$R-\bar{R}$**	**$(R-\bar{R})^2$**
2005/06	189	0	0	0	0
2006/07	300	5.79	61.79	24.19	585.15
2007/08	345	318.76	121	83.4	6955.56
2008/09	285	10	-14.49	-52.09	2713.36
2009/010	234	0	-17.89	-55.49	3079.14
			ΣR=150.41		$\Sigma(R-\bar{R})^2$= 13333.21

Expected return ($\bar{R}$) = $\Sigma R/n$ = 150.41/4 =37.60

Standard deviation = $\sigma = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n-1}} = \sqrt{\frac{13333.21}{3}}$ = 66.67

Coefficient of variation (CV) = $\sigma / \bar{R}$ = 66.67/37.60 = 1.77

Figure 4.1.4(b) Annual rate of return of common stock of Himalayan General Insurance Company



In the table 4.1.4 (b) mean return of HGIC is 37.60% which is highest as compared to market return of 14.64%. The standard deviation is 66.67% and coefficient of variance is 1.77. The figure 4.1.4(b) shows the highest return of 121% in the fiscal year 2007/08 and negative return of -14.49% and -17.89% in the fiscal year 2008/09 and 2009/10 respectively.

4.1.5 Everest Insurance Co. Ltd:

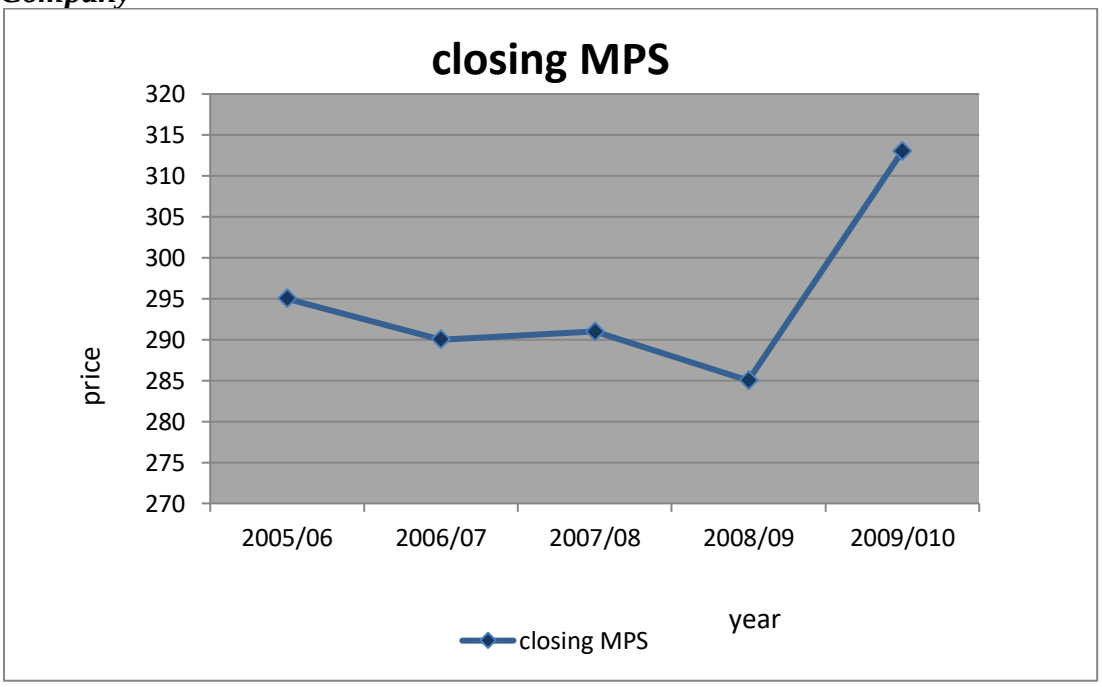
Everest insurance company was established as public limited company in the year 1985 under the company Act 1964. It is growing leading company among the other insurance company of Nepal. Even though the competitive environment of the this insurance market the company has tried to bring many changes in the social and economic development of the country being one of the leading insurance company of Nepal in the fiscal year 2009 and 2010 this insurance company has proved to be one of the best company for collecting more insurance premium and earning profit. The company has in operation only non-life insurance business. It was listed on the Nepal stock exchange in the year1995A.D. The shareholders of EIC are 60 percent from promoters and 40 percent from general public. The total numbers of shareholders till fiscal year 2009/10 are 4905. The company has authorized capital Rs.150000000, issued capital Rs.105000000 and paid-up capital Rs.101250000, the market capitalization is Rs.449 million at the end of fiscal year 2009/10.

There are following five years data of Everest Insurance Company containing high, low, and closing market price per share and total annual dividend paid to share holders are shown in the table 4.1.5(a)

Table 4.1.5(a) Five years MPS and DPS of Everest Insurance Company

F/Y	High MPS	Low MPS	Closing MPS	DPS	Stock Dividend	Total Dividend
05/06	325	290	295	0	0	0
06/07	295	280	290	13.16	0	13.16
07/08	333	280	291	0	0	0
08/09	310	275	285	20	0	20
09/010	297	230	313	0	0	0

Fig 4.1.5(a) Year- end price movement of common stock of Everest Insurance Company



In the figure the market price per share of Everest Insurance Company has remain steady with very more or less steady with very little fluctuation in the fiscal year 2005/06 to 2007/08 and in year 2008/09 which is the lowest market price per share and the highest MPS is in the fiscal year 2009/10. The company has not distributed any stock dividend to share holder in this five years period. The company has distributed a cash dividend of Rs13.16 in year fiscal 2006/07 and Rs20 in the fiscal year 2008/09.

Table 4.1.5(b) Expected return, standard deviation and coefficient of variation of Everest Insurance Company

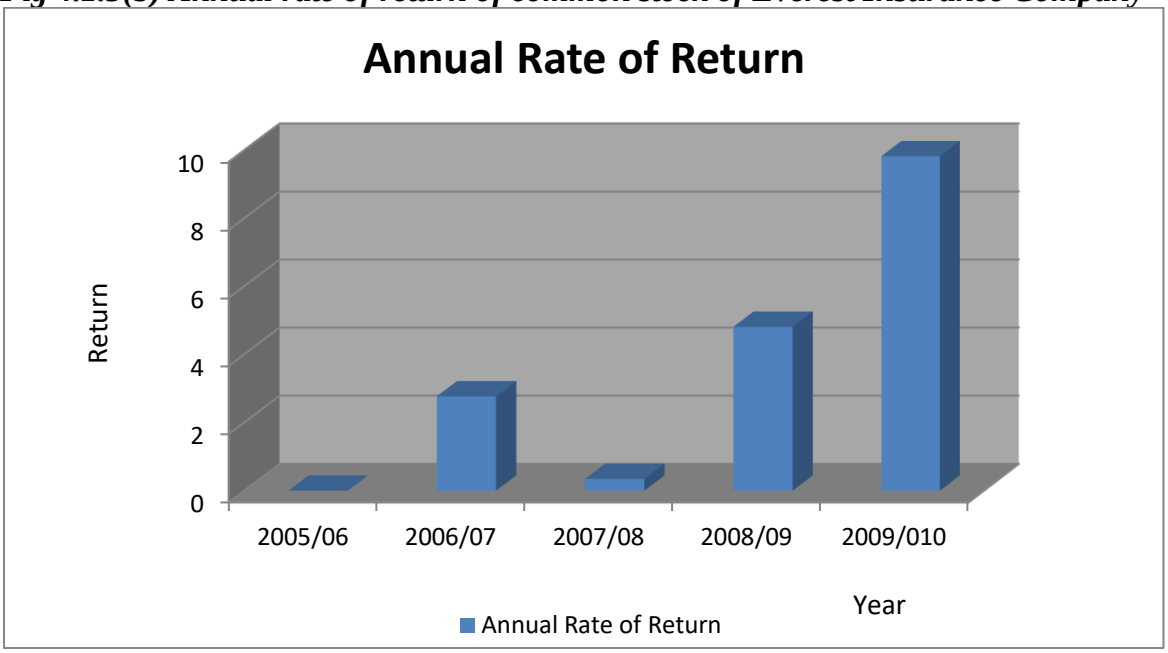
F/Y	**Closing MPS**	**Dividend Per Share**	**R% = $\frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$ X100**	**$R - \bar{R}$**	**$(R - \bar{R})^2$**
05/06	295	0	0	0	0
06/07	290	13.16	2.766	-1.67	2.789
07/08	291	0	0.345	-4.049	16.394
08/09	285	20	4.810	0.374	0.1398
09/010	313	0	9.824	5.388	29.030
			ΣR= 17.745		$\Sigma (R - \bar{R})^2$= 48.35

Expected return $(\bar{R}) = \Sigma R/n = 17.745/4 = 4.436$

Standard deviation = $\sigma = \sqrt{\frac{\Sigma (R - \bar{R})^2}{n-1}} = \sqrt{\frac{48.35}{3}} = 4.014$

Coefficient of variation (CV) = $\sigma / \bar{R} = 4.014/4.436 = 0.904$

Fig 4.1.5(b) Annual rate of return of common stock of Everest Insurance Company



In the table 4.1.5(b) mean return of EIC is 4.436% which is lowest as compared to market return of 14.64%. The standard deviation is 4.014% and coefficient of variance is 0.904. The figure 4.1.5(b) shows the highest return of 9.824% in the fiscal year 2009/010 and lowest but positive return of 2.766% and 0.345% in the fiscal year 2006/07and 2007/08 respectively.

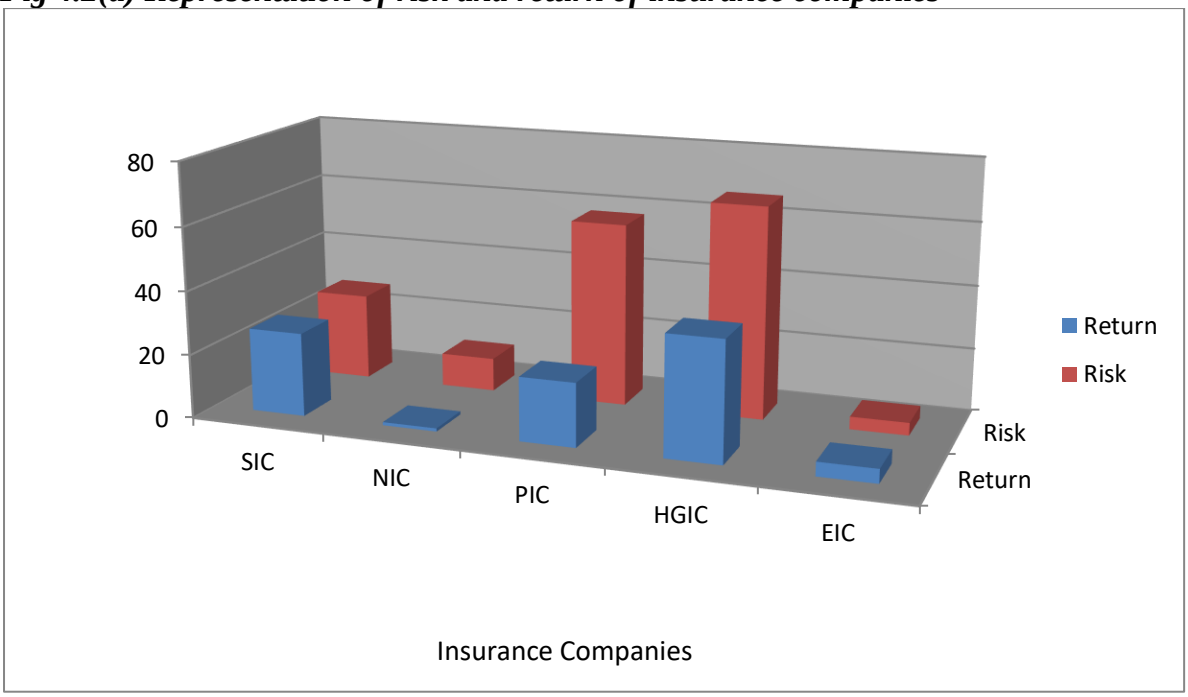
4.2 Analysis of Risk and Return of the common stock

In this phase of study we can analyze the risk return of the common stock of the insurance company which has been calculated above.

Table 4.2(a) Average rate of return, SD, and CV of Insurance Companies

Insurance Companies	Average Return	SD	CV	Remarks
Sagarmatha Insurance	26.262	27.241	1.037	High
Nepal Insurance	0.99	10.496	10.603	low
Premier Insurance	20.06	57.65	2.87	Moderate
Himalayan General Insurance	37.60	66.67	1.77	High
Everest Insurance	4.436	4.014	0.904	low

Fig 4.2(a) Representation of risk and return of insurance companies



The above table and graph shows the average return of five year periods starting from mid July 2005 to mid July 2010 the average return of SIC was 26.262% with standard deviation of return 27.241%. The Coefficient of variance obtained by dividing standard deviation by average return was 1.037

Similarly the average return of NIC was 0.99% with standard deviation of return 10.496%. The Coefficient of variance obtained by dividing standard deviation by average return was 10.603.

Likewise, the average return of PI was 20.06% with standard deviation 57.65% and the coefficient of variance obtained by dividing standard deviation by average return was 2.87.

Again the average return of HIGI was 37.60% with standard deviation of return 66.67% and the coefficient of variance calculated was 1.77.

The EIC average return was 4.436% with standard deviation of return 4.014% and the coefficient of variance was 0.904.

On the basis of the above calculation we can analyze that the returns of Himalayan General Insurance Company and Sagarmatha Insurance Company are high with lower coefficient of variance. The return of Nepal Insurance is low but higher coefficient of variance which represents riskiness in the common stock investment. Likewise, the return of Everest Insurance Company is low but lower CV and the return of Premier Insurance Company is optimum with optimum level of risk of the common stock.

4.3 Market Capitalization of listed securities

By the end of the fiscal year 2009/010, the market capitalization of the listed securities reaches to Rs 376871.38 million. The capitalization was Rs 512939.07 million in the

fiscal year 2008/09. The highest market capitalization recorded in the fiscal year 2009/010 was Rs 506036.7 million on July 20, 2009, and the lowest was Rs 314721.0 million on April 28, 2010. By the end of fiscal year 2009/010, the percentage contribution of market capitalization on the nominal GDP is estimated to be 31.86% the sector wise market capitalization in the fiscal year 2009/010 is presented below

Table4.3 (a) Market capitalization of the fiscal year 2009/010. **Rs In million**

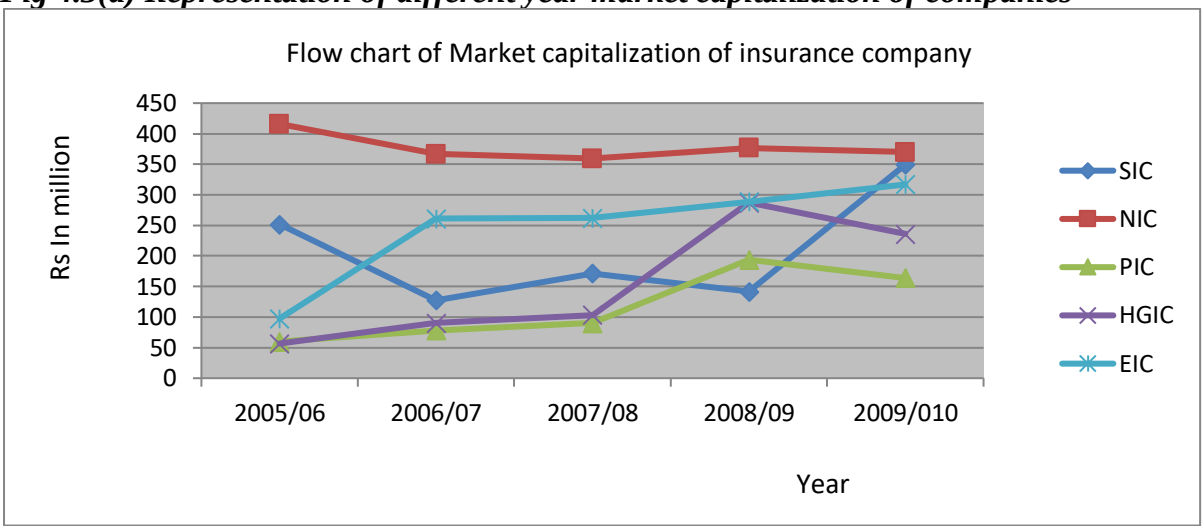
S.N.	Sector	Market capitalization	Percent
1	Commercial Bank	206282.52	54.74
2	Development Bank	27488.87	7.92
3	Financial Company	29869.59	7.29
4	Insurance Company	9756.61	2.59
5	Hotel	5285.58	1.41
6	Manufacturing and Processing Company	7592.03	2.01
7	Trading Company	1617.51	0.43
8	Other Company	88978.67	23.61
		376871.38	**100**

4.3.1 Market capitalization of insurance companies

Table4.3.1(a) Market capitalization of insurance companies from F/Y 2005/06 to2009/010.

Fiscal Year	**Market capitalization of insurance five insurance company of Nepal** **Rs In million**				
	SIC	NIC	PIC	HGIC	EIC
2005/06	251.33	415.9	60	56.70	97.50
2006/07	127.35	366.63	78	90	261
2007/08	171.66	359.44	90	103.5	261.90
2008/09	141.32	376.9	193.80	287.28	288.56
2009/010	349.29	369.71	164.22	235.87	316.91

Fig 4.3(a) Representation of different year market capitalization of companies



The trend of the market capitalization of Sagarmatha Insurance Company was in decreasing order from fiscal year 2005/06 to fiscal year 2008/09. The highest capitalization was in the year 2009/010 and the lowest capitalization was in the year 2006/07.

The trend of market capitalization of the Nepal Insurance company fluctuates in the respective years. The highest capitalization was in the year 2005/06 and the lowest market capitalization was seen in the year fiscal year 2007/08.

The trend of market capitalization of Premier Insurance Company was in increasing order from the fiscal year 2005/06 to 2008/09 and it was noted highest in the fiscal year 2008/09 and lowest in 2005/06

Likewise, the trend of market capitalization of Himalayan General Insurance Company was in increasing order from fiscal year 2005/06 to 2008/09 similar to that of Premier Insurance Company and it was noted highest in the fiscal year 2008/09 and lowest in the fiscal year 2005/06.

The market capitalization trend of Everest Insurance Company far better than other as its capitalization is increasing order till the fiscal year 2009/010 with highest capitalization. And lowest capitalization is in the fiscal year 2005/06

Lastly, we compare the market capitalization of the above five insurance company in the fiscal year 2009/010. We found out the highest capitalization is of Nepal Insurance Company with capitalization of Rs 369.71million and the lowest capitalization is of Premier Insurance Company Ltd with capitalization of 164.22 million.

4.3.2 Market risk returns and market sensitivity of stocks

Market risk arises from the variability in the market returns resulting from alternating bull and bear market forces. The NEPSE index introduced a string of measure to stabilize the volatility of stock market. The index rises fairly consistently from a low point called

trough for a period of time and is termed as bull market condition, then after the bullish condition ends when market index reaches a peak and start a downward trend. This period during which market declines to the next trough is called bear market. Hence, market index furnish a handle summary of historical prices levels in their specific market, especially when they are presented in the graphical form. Nepalese Financial Market, average return or market return can be generated by using NEPSE index.

Table4.3.2 (a) The expected rate of return, SD, and CV of Market is as under.

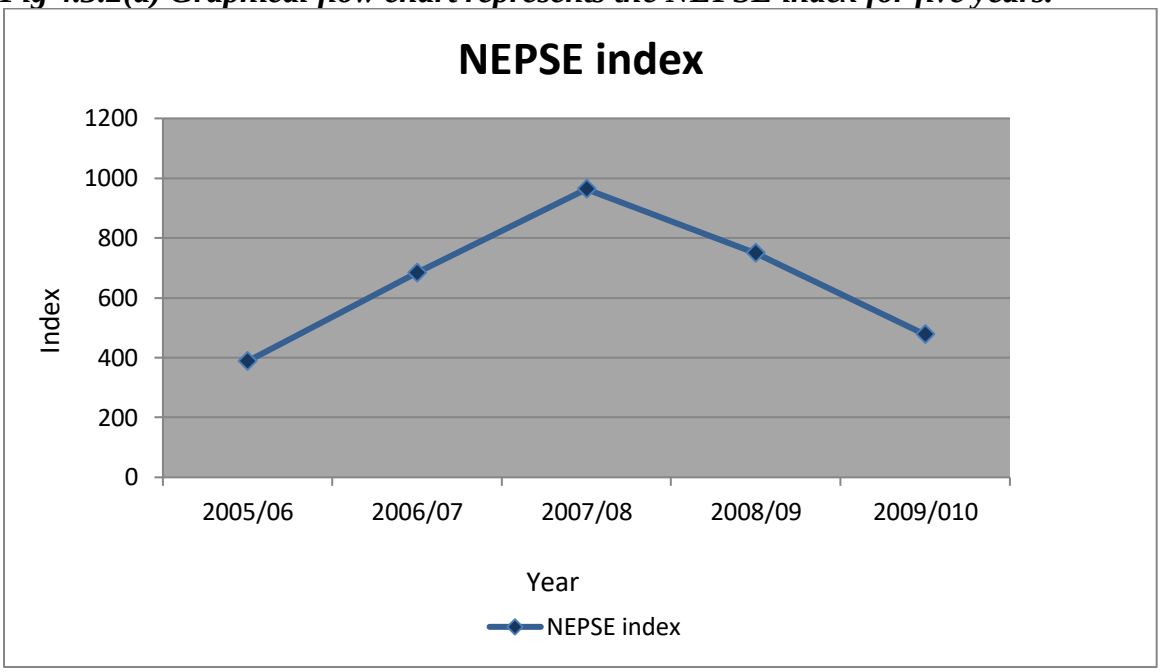
F/Y	NEPSE INDEX	$R_{M\%}$	$R_M-\overline{R}_M$	$(R_M-\overline{R}_M)^2$
2005/06	388.16	-	-	-
2006/07	683.95	76.203	61.563	3790
2007/08	963.4	40.85	26.21	686.96
2008/09	749.10	-22.24	-36.88	1360.13
2009/010	477.73	-36.23	-50.87	2587.75
		ΣR_M =58.583		$\Sigma(R_M-R_M)^2$ = 8424.84

Expected rate of return ($\overline{R_M}$) = $\Sigma R_M/n$ =58.583/4 = 14.64%

Standard deviation = σ = $\sqrt{\frac{\Sigma (R-\overline{R})^2}{n-1}} = \sqrt{\frac{8424.8}{3}}$ = 52.99%

Coefficient of variance (CV) = σ/ $\overline{R_M}$ =52.99/14.64 = 3.61

Fig 4.3.2(a) Graphical flow chart represents the NEPSE index for five years.



Due to the remarkable changes in the share prices of banks, financial institution, insurance, manufacturing, hotels, hydropower etc. the NEPSE index has increased over the year from F/Y 2005/06 to F/Y 2007/08 and highest at F/Y 2007/08 with an index of 963.4 then after due to some political instability and fall in the share price of some banks financial institution, insurance, manufacturing and hotels the NEPSE index has fallen down to 477.73which is near about 35% of decreasing rate of index.

The market sensitivity of risk is measure by the beta coefficient. The total risk of an individual security caused by market factors that simultaneously affects the prices of all the security. This analysis is very useful factor into the analysis and selection process of the risk less common stock in the market which can be measure by beta coefficient. The beta coefficient is an index of systematic risk. Beta is used as the ordinary ranking of the systematic risk of the common stock. The beta coefficient of market is equal to 1.

$$\text{Market port folio risk} = \frac{Cov(r_m, r_m)}{\sigma^2 m} = \frac{P_{mm} \times \sigma_m \times \sigma_m}{\sigma^2 m} = \frac{1 \times \sigma_m \times \sigma_m}{\sigma^2 m} = 1$$

Table 4.3.2(b) Beta coefficient of insurance companies

Insurance companies	Beta coefficient	Remarks
Sagarmatha Insurance Company	0.2229	Medium
Nepal Insurance Company	-0.0359	Low
Premier Insurance Company (Nepal)	0.5816	
Himalayan General Insurance Company	0.7495	High
Everest Insurance Company	-0.0442	

From the above table the beta coefficient of Himalayan General Insurance Company is higher and more sensitive than other but somewhat equal sensitive to market. The beta coefficient of Nepal Insurance Company and Everest Insurance Company is lower and thus less sensitive to market.

4.3.3 Partition of total risk into systematic and unsystematic risk

Table 4.3.3(a) Insurance companies representing systematic and unsystematic risk

Insurance companies	Total risk(σ_i^2)	Systematic risk	Unsystematic risk
SIC	742.07	139.54	602.53
NIC	110.187	3.618	106.569
PICN	3323.52	949.80	2373.71
HGIC	4444.88	1577.36	2867.52
EIC	16.112	5.485	10.626

Lower the beta lower will be the systematic risk and vice versa. The systematic risk of Nepal insurance company is lower and the systematic risk of Himalayan General Insurance Company is higher due to higher beta. Likewise Sagarmatha Insurance Company and Premier Insurance Company has moderate beta with moderate systematic risk.

4.3.4 Comparative Analysis of stock using pricing model

Now from the calculated beta coefficient of individual insurance company in the above table 4.3.2(b) we can use Capital Assets Pricing Model (CAPM) to specify the relation between risk and required rates of return on the common stocks. The risk free rate of return in the treasury bills till mid July 2010 is 8.97%. The Pricing relation is presented in the table below

Table 4.3.4(a) price relation of insurance companies

Stock of insurance company	Expected return ($\bar{R}_i$)	Required rate of return $E(r_i)=r_f+[E(r_m)-r_f]\beta_i$	Remarks	Evaluation
SIC	26.262	10.23%	RR<ER	Underpriced
NIC	0.99	8.76%	RR>ER	Overpriced
PICN	20.06	12.26%	RR<ER	Underpriced
HGIC	37.60	13.22%	RR<ER	Underpriced
EIC	4.436	8.71%	RR>ER	Overpriced

Where,
$E(r_i)$ = Required or equilibrium return of stock
R_f = risk free rate of return of stock.
$E(r_m)$ = market rate of return =14.64% (i.e. of five year from 2005/06 to2009/010)

Since the required rate of return of Nepal Insurance Company and Everest Insurance Company common stocks are greater than the expected return, these stock are overpriced and the required rate of return of Sagarmatha Insurance Company, Premier Insurance Company and Himalayan General Insurance Company common stocks are less than the expected return so they are underpriced. The rational investor should purchase the stock of those companies which are underpriced and hold till the stock price increase as it provide certain return in the future. The investors who are holding the stocks of those companies which are overprice should sell it as to get immediate return from the present market opportunity.

4.4 Analysis of diversification of risk by forming portfolio.

A portfolio is combination of the securities. By the help of portfolio, risk can be easily diversified. In this context, it can be cleared through a proverb "do not put all the eggs in a single basket". It means that one can lose all the eggs if some unlikely events occur.
The main objective of the portfolio analysis in this chapter is to develop a combination of two assets portfolio with optimal weight that minimizes the risk of the investors.
In two-stock portfolio, the optimal weight to invest in stock i and j can be calculated as follows:

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j} \qquad W_j = 1 - W_i$$

Where,

W_i = optimal weight to invest in stock i

W_j = optimal weigh to invest in stock j

Table 4.4(a) Formation of optimal risk and return of two assets portfolio.

S.N	Companies in portfolio	Optimal Weight (%)	Covariance	correlation	$E(\bar{R}_P)$	σ_P
1	SIC/NIC	W_{SIC} = 18.82% W_{NIC} = 81.18%	-80.76	-0.282	5.74%	8.61%
2	SIC/PIC	W_{SIC} = 102.1% W_{PIC} = -2.1%	768.07	0.507	26.39%	27.24%
3	SIC/HGIC	W_{SIC} =101.2% W_{HGIC} = -1.2%	788.82	0.4343	26.125%	27.22%
4	SIC/EIC	W_{SIC} = 3.68% W_{EIC} = 96.32%	-12.713	-0.116	5.238%	3.88%
5	NIC/PIC	W_{NIC} = 90.76% W_{PIC} = 9.24 %	-253.74	-0.419	2.75%	8.75%

6	NIC/HGIC	W_{NIC} = 91% W_{HGIC} = 9%	-354.91	-0.5071	4.28%	8.31%
7	NIC/EIC	W_{NIC} = -0.1126% W_{EIC} =1.1126%	24.761	0.5876	4.82%	3.89%
8	PIC/HGIC	W_{PIC} = 77% W_{HGIC} = 23%	2838.83	0.738	24.09%	56.67%
9	PIC/EIC	W_{PIC} = 4.2% W_{EIC} = 95.8%	-134.53	-0.581	5.09%	3.13%
10	HGIC/EIC	W_{HGIC} = 4% W_{EIC} = 96%	-174.13	-0.6506	5.75%	2.92%

From the above analysis, an optimal portfolio is formed in which the two assets of the sample insurance company has been combined to obtain that combination where there will be maximum return and risk also minimize. Here while forming the portfolio between SIC and PIC there will be higher return of 26.39% with standard deviation of 27.24%. Likewise the combination of the portfolio between SIC and HGIC there will be an optimal return and risk of 26.125% and 27.22% respectively. The lower optimal risk and return can be obtained between HGIC and EIC where risk can minimize up to 2.92% with low return of 5.75%.

4.5 Comparative ranking of different portfolio

Table 4.5(a) Analysis of stock under Sharpe's performance measure

Common stock	$\overline{R_i}$	σ_i	R_f	Si = $\frac{\overline{R_i} - R_f}{\sigma_i}$	Rank
SIC	26.262	27.241	8.97%	0.634	1
NIC	0.99	10.497	8.97%	-0.7602	4
PIC	20.06	57.65	8.97%	0.192	3
HGIC	37.60	66.67	8.97%	0.429	2
EIC	4.436	4.014	8.97%	-1.12	5

The Sharpe's performance measures use the standard deviation of the returns as the measure of total risk. This measure evaluates the port folio on the basis of both rate of return performance and diversification. According to this performance measure higher value of S_i means better performing portfolio as this indicates higher risk premium per unit of total risk. From the above table SIC has better performing portfolio and EIC has lower performing portfolio.

Table 4.5(b) Analysis of stock under Treynor's performance measure

Common stock	$\bar{R}_i$	β_i	R_f	$Si = \frac{\bar{R}_i - R_f}{\beta_i}$	Rank
SIC	26.262	0.2229	8.97%	77.57	1
NIC	0.99	-0.0359	8.97%	-222.28	5
PIC	20.06	0.5816	8.97%	19.06	3
HGIC	37.60	0.7495	8.97%	38.19	2
EIC	4.436	-0.0442	8.97%	-102.57	4

There are some differences in the ranking of Sharpe's and Treynor's measure of performance. Treynor's measures uses only the systematic risk coefficient of Beta and do not tells about diversification of portfolio. According to the Treynor's performance measure SIC has better performing portfolio and NIC has lower performing portfolio.

Table4.5(c) Analysis of stock under Jensen's performance measure

Common Stock	$\bar{R}_i$	$\bar{R}_m$	R_f	β_i	$\alpha_p = \bar{R}_i - [R_f + (\bar{R}_m - R_f)\beta_i]$	Rank
SIC	26.262	14.64%	8.97%	0.2229	16.02	2
NIC	0.99	14.64%	8.97%	-0.0359	-7.77	5
PIC	20.06	14.64%	8.97%	0.5816	7.8	3
HGIC	37.60	14.64%	8.97%	0.7495	24.39	1
EIC	4.436	14.64%	8.97%	-0.0442	-4.284	4

Jensen's measure represents how much of the rate of return on the portfolio is greater than the average returns adjusted for risk. Positive α_p indicates superior portfolio performance and undervalued. The negative α_p represents inferior portfolio performance and overvalued. From Jensen's measure the best performance is awarded to HGIC with rank first and lower ranking is done to NIC and EIC because of low portfolio performance.

4.6 Measure finding of study:

The measure findings of study are stated below:

1) The mean return of stock of Sagarmatha insurance company was found to be 26.262%, standard deviation of 27.241%, and CV of 1.037. Similarly, the mean return of NIC was 0.99% with standard deviation and CV of 10.497% and 10.603 respectively. The mean return of Premier Insurance Company was found to be 20.06%, standard deviation of 57.65% and CV of 2.87. The mean return of Himalayan General Insurance was noted 37.60%, standard deviation of 66.67% and CV of 1.77 and finally the mean return of EIC was 4.436%, with standard deviation and CV of 4.014% and 0.904 respectively.

2) The returns of Himalayan General Insurance Company and Sagarmatha Insurance Company are high with lower coefficient of variance. The return of Nepal Insurance is low but higher coefficient of variance which represents riskiness in the common stock investment. Likewise, the return of Everest Insurance Company is low but lower CV and the return of Premier Insurance Company is optimum with optimum level of risk of the common stock.

3) Market capitalization trend for five years has been observe for different insurance company and finally concluded that at the end of fiscal year 2009/010 Nepal Insurance Company have highest capitalization of Rs 369.71million and Premier Insurance Company Ltd with have lowest capitalization of Rs164.22 million.

4) The average rate of return given by NEPSE index was 14.64% with standard deviation and CV of 52.99% and 3.61 respectively.

5) The beta coefficient of individual insurance company were measured and found as follows:

Beta coefficient of insurance companies

Insurance companies	Beta coefficient
Sagarmatha Insurance Company	0.2229
Nepal Insurance Company	-0.0359
Premier Insurance Company (Nepal)	0.5816
Himalayan General Insurance Company	0.7495
Everest Insurance Company	-0.0442

6) The total risk of the insurance companies was partitioned into systematic and unsystematic form. The variance of return of SIC, NIC, PIC, HGIC and EICwere742.07, 110.187, 3323.52, 4444.88 and 16.112 respectively. The systematic and unsystematic risks are as mentioned below

Insurance companies	Systematic risk	Unsystematic risk
Sagarmatha Insurance Company	139.54	602.53
Nepal Insurance Company	3.618	106.569
Premier Insurance Company (Nepal)	949.80	2373.71
Himalayan General Insurance Company	1577.36	2867.52
Everest Insurance Company	5.485	10.626

7) Under the pricing study of the insurance company it was found that Nepal Insurance Company and Everest Insurance Company were overpriced and rest companies such as SIC, PIC and HGIC were underpriced.

8) The portfolio formed between SIC and PIC there will be higher return of 26.39% with standard deviation of 26.84%. Likewise the combination of the portfolio between SIC and HGIC there will be an optimal return and risk of 26.125% and 27.22% respectively. The

lower optimal risk and return can be obtained between HGIC and EIC where risk can minimize up to 2.92% with low return of 5.75%.

9) The portfolio performance under Sharpe's SIC has better performing portfolio and EIC has lower performing portfolio. According to the Treynor's performance measure SIC has better performing portfolio and NIC has lower performing portfolio. And finally from Jensen's measure the best performance is awarded to HGIC with rank first and lower ranking is done to NIC and EIC because of low portfolio performance.

CHAPTER V

SUMMARY CONCLUSION AND RECOMMENDATION

5.1Summary:

Risk and return and portfolio analysis is the part of the business world. If there is no risk, there will be no return. The economy is growing rapidly, which in forces the changes in the variable of world economy in galloping manner. No investors would like to make their investment in the risky asset which holds higher possibilities of risk and yield lower rate of return unless he is assured of adequate compensation for the acceptance of risk. In Nepal, there is a tremendous scope to develop the insurance market, so the potential of Nepal's insurance market is large. It has majority of middle class population and industrialization process is going on. Insurance sector is the most dynamic part of the economy which insures the risk and collects premium hence, the insurance companies play an important role in the modern economy. Common stock is regarded most risky security and one of the major paper asset, traded in the security market. Hence, risk plays a central role in the analysis of investment. A rational investor always seeks to find the optimal portfolio so that this will reduce risk in his/her investment. The major objective of this research study is to analyze the risk and return of insurance company in the context of Nepal. There are five listed non life insurance companies in NEPSE that have been taken as sample and their individual risk and return were calculated and analyzed as a whole in order to find out the financial performance of common stock of each insurance companies. The economic development is possible only when domestic resources are properly mobilized and utilized. Similarly, for integrated and speedy development of the country often ask about the total risk they will be assuming in an investment and like to know if, the risk premium is provided enough. Higher risk gives higher premium and the tradeoff between the two assumes a linear relationship between risk and risk premium. During the research work, a brief review of literature has been conducted, Mathematical and financial tools were utilized and Tables, graphs and diagrams were used to present the data and results in the systematic manner. Secondary data were collected from the NEPSE, SEBON, NRB, and annual financial report of respective companies and varieties of the conclusion have been generated from the research work. The major problem faced by investors is inability to create an optimal portfolio, that's why investors lose their huge money in the share market without an idea of investment. Major objective of this research work is to project an optimal portfolio in Common Stock investment among the Common Stock of insurance companies of Nepal.

5.2Conclusion:

On the basis of the above calculation and analysis following conclusion can be drawn
The average return of SIC and HGIC higher because market price per share has raise in the fiscal year and company has also distributed both stock dividend and cash dividend to the share holders. The return of NIC and EIC is low because of fall in the market price of the share.

The beta coefficient of HGIC is Higher and more sensitive than other insurance company but somewhat equal sensitive to the market. The beta of NIC and EIC is lower i.e. lower systematic risk.

Since the beta of the security is less than that of the market so all the security tends to be low riskier than the market.

The relationship between return of insurance company common stocks and its systematic risk can be expressed by using CAPM. The CAPM is an equilibrium model for the risk and return trade off for all assets including both inefficient and efficient portfolios. Since the required rate of return of SIC, PIC, and HGIC are less than expected return so investors are profitable to purchase the stock of those companies as there is greater chance of increase in the price in near future.

An efficient diversified portfolio formed by the combination of two or more assets from the Markowitz model helps in selection of best portfolio having greater return with optimal level of risk. The portfolio formed between SIC and PIC provide return of 26.39% at portfolio risk of 27.24% , likewise the port folio between SIC and HGIC Provide return of 26.125% at port folio risk level of 27.22%.

The correlation between HGIC and EIC is low that is -0.6506 and the correlation PIC and HGIC is high i.e. 0.738

From Sharpe's performance measure SIC has got better performing portfolio and EIC has lower performing portfolio.

From Treynor's performance measure SIC has better performing portfolio and NIC has lower performing portfolio.

According to Jensen's performance measure HGIC has superior portfolio performance and NIC has inferior portfolio performance

5.3Recommendation:

There are following things that can be recommended from the investment.
The insurance company should not focus on profit maximization but also the overall wealth maximization of the shareholders. Since, share price depends on a number of financial decisions as well as market and economic environment. But largely, it is a function of firm's investment decision, financial decision and dividend policy decision. So, a financial manager should make all decision in the line of maximizing shareholder wealth.

It is recommended to investors that while making an investment decision the investor should consider the company's market price per share financial position, risk bearing capacity, investment policy and competitors of the investing company.

An investor should buy the securities of that company which are underpriced and hold for sometimes and sell it when price rises to earn expected return. Again those investors who are holding that security which is overpriced should sell it to earn return from short sell. If the expected return is equal to the require rate of return then do not trade.

From the analysis in the above chapter it will be helpful to an investor to invest in the common stock of Sagarmatha General Insurance Company and Himalyan General Insurance Company as their Systematic risk is higher which leads an easily raising and falling of the stock and return generated will be high.

In the secondary market NEPSE trading system needs to be modernized with modern technology so that more and more investors can trade easily through the modern technology. Further effective and efficient informative channel should develop to flow the trading information to the NEPSE listed companies.

Government of the country should provide flexibility in tax procedure and should provide favorable climate for trade and business. Again government should amend proper rules and regulation for the development of stock market in Nepal.

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ANNEX-I

Calculation of Covariance between Sagarmatha Insurance Company and Market

F/Y	R_{SI} %	$R_S - \bar{R}_S$	$R_M - \bar{R}_M$	$(R_S - \bar{R}_S)(R_M - \bar{R}_M)$
2006/07	44.52	18.26	61.563	1124.14
2007/08	39.50	13.24	26.21	347.02
2008/09	-14.20	-40.46	-36.88	1492.16
2009/010	35.23	8.978	-50.87	-456.71
				$\Sigma(R_S - \bar{R}_S)(R_M \bar{R}_M) = 2506.61$

Cov $r_s r_m = 1/n\ \Sigma(R_S - \bar{R}_S)\ (R_M \bar{R}_M) = 2506.61/4 = 626.65$

Beta of SI= Cov $r_s r_m$ / $\sigma^2_M = 626.65/2807.94 = 0.223$

ANNEX-II

Calculation of Covariance between Nepal Insurance Company and Market

F/Y	R_N%	$R_N - \bar{R}_N$	$R_M - \bar{R}_M$	$(R_N - \bar{R}_N)(R_M - \bar{R}_M)$
2006/07	-11.85	-12.84	61.563	-790.46
2007/08	-1.960	-2.95	26.21	-77.31
2008/09	4.86	3.87	-36.88	-142.72
2009/010	12.91	11.92	-50.87	606.37
				$\Sigma(R_N - \bar{R}_N)(R_M \bar{R}_M) = -404.12$

Cov $r_n r_m = 1/n\ \Sigma(R_N - \bar{R}_N)(R_M \bar{R}_M) = -404.12/4 = 101.03$

Beta of SI= Cov $r_n r_m$ / σ^2_M =-101.03/2807.94=-0.0359

ANNEX-III

Calculation of Covariance between Premier Insurance Company and Market

F/Y	R_P%	$R_P-\bar{R}_P$	$\bar{R}_M-R_M$	$(R_P-\bar{R}_P)(R_M-\bar{R}_M)$
2006/07	32.89	12.83	61.563	789.85
2007/08	95.76	75.7	26.21	1984.09
2008/09	-33.15	-53.21	-36.88	1962.38
2009/010	-15.26	-35.32	-50.87	1796.72
				$\Sigma(R_P-\bar{R}_P)(R_M\bar{R}_M)$=6533.04

Cov $r_p r_m$ =1/n $\Sigma(R_P-\bar{R}_P)(R_M\bar{R}_M)$= 6533.04/4=1633.26

Beta of SI= Cov $r_p r_m$ / σ^2_M =1633.26/2807.94=0.581

ANNEX-IV

Calculation of Covariance between Himalayan General Insurance Company and Market

F/Y	R_H%	$R_H-\bar{R}_H$	$\bar{R}_M-R_M$	$(R_H-\bar{R}_H)(R_M-\bar{R}_M)$
2006/07	61.79	24.19	61.563	1489.20
2007/08	121	83.4	26.21	2185.914
2008/09	-14.49	-52.09	-36.88	1921.07
2009/010	-17.89	-55.49	-50.87	2822.77
				$\Sigma(R_H-\bar{R}_H)(R_M\bar{R}_M)$=8418.96

Cov $r_h r_m$ =1/n $\Sigma(R_H-\bar{R}_H)(R_M\bar{R}_M)$= 8418.96/4=2104.74

Beta of SI= Cov $r_h r_m$ / σ^2_M =2104.74/2807.94=0.7495

ANNEX-V

Calculation of Covariance between Everest Insurance Company and Market

F/Y	R_E%	$R_E-\bar{R}_E$	$R_M-\bar{R}_M$	$(R_E-\bar{R}_E)(R_M-\bar{R}_M)$
2006/07	2.766	-1.67	61.563	-102.81
2007/08	0.345	-4.049	26.21	-106.12
2008/09	4.810	0.374	-36.88	-13.79
2009/010	9.824	5.388	-50.87	-274.08
				$\Sigma(R_E-\bar{R}_E)(R_M\bar{R}_M)$=-496**.8**

Cov $r_e r_m$ =1/n $\Sigma(R_E-\bar{R}_E)(R_M\bar{R}_M)$= 496/4=124.2

Beta of SI= Cov $r_e r_m$ / σ^2_M =124.2/2807.94=0.0442

ANNEX-VI

Partition of total risk of Sagarmatha Insurance Company

Total risk = σ^2 of SIC =27.241^2=742.07

Systematic risk =β^2_{SI} σ^2_M = $(0.2231)^2 X (52.99)^2$

=139.76

Unsystematic risk = Total risk -Systematic risk

= 742.07-139.76

= 602.31

ANNEX-VII

Partition of total risk of Nepal Insurance Company

Total risk = σ^2 of NIC =10.497^2=110.187

Systematic risk =$\beta^2_{NI}\ \sigma^2_M$ = $(-0.0359)^2$X$(52.99)^2$

= 3.618

Unsystematic risk = Total risk -Systematic risk

=110.187-3.618

=106.569

ANNEX-VIII

Partition of total risk of Premier Insurance Company

Total risk = σ^2 of PIC =57.65^2=3323.52

Systematic risk =$\beta^2_{PI}\ \sigma^2_M$ = $(0.5816)^2$X $(52.99)^2$

= 949.80

Unsystematic risk = Total risk -Systematic risk

=3323.52- 949.80

=2373.71

ANNEX-IX

Partition of total risk of Himalayan General Insurance Company

Total risk = σ^2 of HGIC =66.67^2=4444.88

Systematic risk =$\beta^2_{HGI}\ \sigma^2_M$ = $(0.7495)^2$X $(52.99)^2$

= 1577.36

Unsystematic risk = Total risk -Systematic risk

=4444.88-1577.36

=2867.52

ANNEX-X

Partition of total risk of Everest Insurance Company

Total risk = σ^2 of EIC = 4.014^2=16.112

Systematic risk =$\beta^2_{EI}\ \sigma^2_M = (-0.0442)^2 X\ (52.99)^2$

= 5.485

Unsystematic risk = Total risk -Systematic risk

= 16.112-5.485

= 10.626

ANNEX-XI

Calculation of Cov between Sagarmatha Insurance and Nepal Insurance Company

Year	R_{SI}	$R_{SI}- \bar{R}_{SI}$	R_{NI}	$R_{NI}- \bar{R}_{NI}$	$(R_{SI}-\bar{R}_{SI})(R_{NI}-\bar{R}_{NI})$
2006/07	44.52	18.26	-11.85	-12.84	-234.45
2007/08	39.50	13.24	-1.960	-2.95	-39.05
2008/09	-14.20	-40.46	4.86	3.87	-156.58
2009/010	35.23	8.978	12.91	11.92	107.01
					$\Sigma(R_{SI}-\bar{R}_{SI})(R_{NI}-\bar{R}_{NI})$ = 323.07

Cov $_{SI,NI}$ =1/n $\Sigma(R_{SI}- \bar{R}_{SI})\ (R_{NI}- \bar{R}_{NI})$=323.07/4=-80.76

Correlation = Cov $_{SI,NI}$ $/\sigma_{SI,}\sigma_{NI}$ =-80.76/285.94 =-0.282

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_{SI} = \frac{(10.497)^2-\{-0.282 \times 27.241 \times 10.497\}}{(27.241)^2 + (10.497)^2- \{2x-0.282x27.241x10.497\}}$$

$$= 0.1882$$

$$W_{NI} = 1- 0.1882$$

$$= 0.8118$$

$$E(R_P) = W_A X R_A + W_B X R_A$$

$$= 0.1882 X 26.262 +0.8118 X 0.99$$

$$= 5.74\%$$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2Cov_{AB} W_A W_B}$$

$$= \sqrt{(0.1882)^2 X (27.241)^2 + (0.8118)^2 X (10.497)^2 +2 X - 80.76 X 0.1882 X 0.8118}$$

$$= 8.61\%$$

ANNEX-XII

Calculation of Cov between Sagarmatha Insurance and Premier Insurance Company

Year	R_{SI}	$R_{SI}- \bar{R}_{SI}$	R_{PI}	$R_{PI}- \bar{R}_{PI}$	$(R_{SI}-\bar{R}_{SI})(R_{PI}-\bar{R}_{PI})$
2006/07	44.52	18.26	32.89	12.83	234.27
2007/08	39.50	13.24	95.76	75.7	1002.26
2008/09	-14.20	-40.46	-33.15	-53.21	2152.87
2009/010	35.23	8.978	-15.26	-35.32	-317.10
					$\Sigma(R_{SI}-\bar{R}_{SI})(R_{PI}-\bar{R}_{PI})= 3072.3$

$\text{Cov}_{SI,PI} = 1/n\ \Sigma(R_{SI} - \overline{R}_{SI})\ (R_{PI} - \overline{R}_{PI}) = 3072.3/4 = 768.07$

$\text{Correlation} = \text{Cov}_{SI,PI} \ / \ \sigma_{SI,}\sigma_{PI} = 768.07/1514 = 0.507$

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_{SI} = \frac{(57.65)^2 - \{0.507X27.241X57.65\}}{(27.241)^2 + (57.65)^2 - \{2x\text{-}0.507x27.241x57.65\}}$$

$= 1.021$

$W_{PI} = 1 - 1.021$

$= -0.021$

$E(R_P) = W_A X R_A + W_B X R_A$

$= 1.021X\ 26.262 + 0.021\ X\ 20.06$

$= 26.39\%$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2Cov_{AB}\ W_A W_B}$$

$$= \sqrt{(1.021)^2\ X\ (27.241)^2 + (-\ 0.021)^2\ X\ (57.65)^2 + 2\ X\ 768.07X\ 1.021\ X\ -0.021}$$

$= 27.24\%$

ANNEX-XIII

Calculation of Cov between Sagarmatha Insurance and Himalayan General Insurance Company

Year	R_{SI}	$R_{SI}- \bar{R}_{SI}$	R_{HGI}	$R_{HGI}- R_{HGI}$	$(R_{SI}-\bar{R}_{SI})(R_{HGI}-\bar{R}_{HGI})$
2006/07	44.52	18.26	61.79	24.19	441.70
2007/08	39.50	13.24	121	83.4	1104.21
2008/09	-14.20	-40.46	-14.49	-52.09	2107.56
2009/010	35.23	8.978	-17.89	-55.49	-498.18
					$\Sigma(R_{SI}-\bar{R}_{SI})(R_{HGI}-\bar{R}_{HGI})$ =3155.29

$Cov_{SI,HGI} = 1/n\ \Sigma(R_{SI}- \bar{R}_{SI})\ (R_{HGI}- \bar{R}_{HGI}) = 3155.29/4 = 788.82$

$Correlation = Cov_{SI,HGI} \ / \sigma_{SI,}\sigma_{HGI} = 788.82/1816.15 = 0.4343$

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_{SI} = \frac{(66.67)^2 - \{0.4343 X 27.241 X 66.67\}}{(27.241)^2 + (66.67)^2 - \{2x\text{-}0.4343 X 27.241 X 66.67\}}$$

$= 1.012$

$W_{HGI} = 1 - 1.012$

$= -0.012$

$E(R_P) = W_A X R_A + W_B X R_A$

$= 1.012 X 26.262 + -0.012 X 37.60$

$= 26.125\%$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2Cov_{AB} W_A W_B}$$

$$= \sqrt{(1.012)^2 \text{ X } (27.241)^2 + (-0.012)^2 \text{ X } (66.67)^2 - 2 \text{ X } 788.82 \text{ X } 1.012 \text{ X } 0.012}$$

= 27.22%

ANNEX-XIV

Calculation of Cov between Sagarmatha Insurance and Everest Insurance Company

Year	R_{SI}	$R_{SI} - \bar{R}_{SI}$	R_{EI}	$R_{EI} - \bar{R}_{EI}$	$(R_{SI}-\bar{R}_{SI})(R_{EI}-\bar{R}_{EI})$
2006/07	44.52	18.26	2.766	-1.67	-30.49
2007/08	39.50	13.24	0.345	-4.049	-53.60
2008/09	-14.20	-40.46	4.810	0.374	-15.32
2009/010	35.23	8.978	9.824	5.388	48.37
					$\Sigma(R_{SI}-\bar{R}_{SI})(R_{EI}-\bar{R}_{EI})$ = -50.852

$Cov_{SI,EI} = 1/n\ \Sigma(R_{SI} - \bar{R}_{SI})(R_{EI} - \bar{R}_{EI}) = -50.852/4 = -12.713$

Correlation = $Cov_{SI,EI} / \sigma_{SI}\sigma_{EI} = -12.713/109.345 = -0.116$

$$W_i = \frac{\sigma_j^2 - \rho_{ij} \text{ X } \sigma_i \text{ X } \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 \text{ X } \rho_{ij} \text{ X } \sigma_i \text{ X } \sigma_j}$$

$$W_{SI} = \frac{(4.014)^2 - \{-0.116 \text{ X } 27.241 \text{ X } 4.014\}}{(27.241)^2 + (4.014)^2 - \{2x\text{-}0.116 \text{ X } 27.241 \text{ X } 4.014\}}$$

= 0.0368

W_{EI} = 1- 0.0368

= 96.32

$E(R_P)$ = W_A X R_A + W_B X R_A

= 0.0368 X 26.262 +0.9632 X 4.436

= 5.238

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2 Cov_{AB} W_A W_B}$$

$$= \sqrt{(0.0368)^2 \text{ X } (27.241)^2 + (0.9632)^2 \text{ X } (4.014)^2 + 2 \text{ X } -12.713 \text{ X } 0.0368 \text{ X } 0.9632}$$

= 3.88

ANNEX-XV

Calculation of Cov between Nepal Insurance and Premier Insurance Company

Year	R_{NI}	$R_{NI} - \bar{R}_{NI}$	R_{PI}	$R_{PI} - \bar{R}_{PI}$	$(R_{NI} - \bar{R}_{NI})(R_{PI} - \bar{R}_{PI})$
2006/07	-11.85	-12.84	32.89	12.83	-164.73
2007/08	-1.960	-2.95	95.76	75.7	- 223.31
2008/09	4.86	3.87	-33.15	-53.21	- 205.92
2009/010	12.91	11.92	-15.26	-35.32	- 421.01
					$\Sigma(R_{NI} - \bar{R}_{NI})(R_{PI} - \bar{R}_{PI})$ = -1014.97

$Cov_{NI, PI} = 1/n \, \Sigma(R_{NI} - R_{NI})(R_{PI} - R_{PI}) = -1014.97/4 = -253.74$

Correlation = $Cov_{NI, PI} / \sigma_{NI} \sigma_{PI}$ = -253.74/605.15= - 0.419

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_{NI} = \frac{(57.65)^2 - \{-0.419 X 10.497 X 57.65\}}{(10.497)^2 + (57.65)^2 - \{2x-0.419X 10.497X57.65\}}$$

$= 0.9076$

$W_{PI} = 1- 0.9076$

$= 0.0924$

$E(R_P) = W_A X R_A + W_B X R_A$

$= 0.9076 X 0.99 +0.0924 X 20.06$

$= 2.75\%$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2Cov_{AB} W_A W_B}$$

$$= \sqrt{(0.9076)^2 X (10.497)^2 + (0.0924)^2 X (57.65)^2 + 2 X -253.74 X 0.9076 X 0.0924}$$

$= 8.75\%$

ANNEX-XVI

Calculation of Cov between Nepal Insurance and Himalayan General Insurance Company

Year	R_{NI}	$R_{NI} - \bar{R}_{NI}$	R_{HGI}	$R_{HGI} - \bar{R}_{HGI}$	$(R_{NI}-\bar{R}_{NI})(R_{HGI}-\bar{R}_{HGI})$
2006/07	-11.85	-12.84	61.79	24.19	-310.59
2007/08	-1.960	-2.95	121	83.4	-246.03
2008/09	4.86	3.87	-14.49	-52.09	-201.58

2009/010	12.91	11.92	-17.89	-55.49	-661.44
					$\Sigma(R_{NI}-\bar{R}_{NI})(R_{HGI}-\bar{R}_{HGI})$= -1419.64

$Cov_{NI, HGI}=1/n\ \Sigma(R_{NI}- \bar{R}_{NI})\ (R_{HGI}- \bar{R}_{HGI})$=-1419.64/4= -354.91

Correlation = $Cov_{NI, HGI} \ / \sigma_{NI}\ \sigma_{HGI}$ = -354.91/699.83= - 0.5071

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_{NI} = \frac{(66.67)^2-\{-0.5071 X 10.497 X 66.67\}}{(10.497)^2 + (66.67)^2-\{2 X -0.5071 X 10.497 X 66.67\}}$$

= 0.91

W_{HGI} = 1- 0.91

= 0.09

$E(R_P)$ = $W_A X R_A + W_B X R_A$

= 0.91 X 0.99 +0.09 X 37.60

= 4.28%

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2 Cov_{AB} W_A W_B}$$

$$= \sqrt{(0.91)^2 X (10.497)^2 + (0.09)^2 X (66.67)^2 + 2 X -354.91 X 0.91 X 0.09}$$

= 8.31%

ANNEX-XVII

Calculation of Cov between Nepal Insurance and Everest Insurance Company

Year	R_{NI}	$R_{NI}- \bar{R}_{NI}$	R_{EI}	$R_{EI}- \bar{R}_{EI}$	$(R_{NI}-\bar{R}_{NI})(R_{EI}-\bar{R}_{EI})$
2006/07	-11.85	-12.84	2.766	-1.67	21.44
2007/08	-1.960	-2.95	0.345	-4.049	11.94
2008/09	4.86	3.87	4.810	0.374	1.447
2009/010	12.91	11.92	9.824	5.388	64.22
					$\Sigma(R_{NI}-\bar{R}_{NI})(R_{HGI}-\bar{R}_{HGI}) = 99.047$

$Cov_{NI, EI}=1/n\ \Sigma(R_{NI}- \bar{R}_{NI})\ (R_{EI}- \bar{R}_{EI})=99.047/4= 24.761$

Correlation = $Cov_{NI, EI} \ / \sigma_{NI}\ \sigma_{EI} = 24.761/42.134= 0.5876$

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_{NI} = \frac{(4.014)^2 - \{0.5876 X 10.497 X 4.014\}}{(10.497)^2 + (4.014)^2 - \{2 X 0.5876 X 10.497 X 4.014\}}$$

$= -0.1126$

$W_{EI} = 1- (-0.1126)$

$= 1.1126$

$E(R_P) = W_A X R_A + W_B X R_A$

= -0.1126 X 0.99 +1.1126 X 4.436

= 4.82%

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2 Cov_{AB} W_A W_B}$$

$$= \sqrt{(-0.1126)^2 \text{ X } (10.497)^2 + (1.1126)^2 \text{ X } (4.014)^2 + 2 \text{ X } 24.761 \text{ X } -0.1126 \text{ X } 1.1126}$$

= 3.89%

ANNEX XVIII

Calculation of Cov between Premier Insurance and Himalayan General Insurance Company

Year	R_{PI}	$R_{PI} - \bar{R}_{PI}$	R_{HGI}	$R_{HGI} - \bar{R}_{HGI}$	$(R_{PI} - \bar{R}_{PI})(R_{HGI} - \bar{R}_{HGI})$
2006/07	32.89	12.83	61.79	24.19	310.35
2007/08	95.76	75.7	121	83.4	6313.38

2008/09	-33.15	-53.21	-14.49	-52.09	2771.70
2009/010	-15.26	-35.32	-17.89	-55.49	1959.90
					$\Sigma(R_{PI}-\overline{R}_{PI})(R_{HGI}-\overline{R}_{HGI})$= 11355.33

$Cov_{PI, HGI} = 1/n\ \Sigma(R_{PI}- \overline{R}_{PI})\ (R_{HGI}- \overline{R}_{HGI}) = 11355.33/4 = 2838.83$

$Correlation = Cov_{PI, HGI} / \sigma_{PI}\,\sigma_{HGI} = 2838.83/3843.52 = 0.738$

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_{PI} = \frac{(66.67)^2 - \{0.738 X 57.65 X 66.67\}}{(57.65)^2 + (66.67)^2 - \{2 X 0.738 X 57.65 X 66.67\}}$$

$= 0.77$

$W_{HGI} = 1 - 0.77$

$= 0.23$

$E(R_P) = W_A X R_A + W_B X R_A$

$= 0.77 X 20.06 + 0.23 X 37.60$

$= 24.09\%$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2 Cov_{AB} W_A W_B}$$

$$= \sqrt{(0.77)^2 X (57.65)^2 + (0.23)^2 X (66.67)^2 + 2 X 2838.83 X 0.77 X 0.23}$$

= 56.67%

ANNEX XIX

Calculation of Cov between Premier Insurance and Everest Insurance Company

Year	R_{PI}	$R_{PI}- \bar{R}_{PI}$	R_{EI}	$R_{EI}- \bar{R}_{EI}$	$(R_{PI}-\bar{R}_{PI})(R_{EI}-\bar{R}_{EI})$
2006/07	32.89	12.83	2.766	-1.67	-21.42
2007/08	95.76	75.7	0.345	-4.049	-306.50
2008/09	-33.15	-53.21	4.810	0.374	-19.90
2009/010	-15.26	-35.32	9.824	5.388	-190.30
					$\Sigma(R_{PI}-\bar{R}_{PI})(R_{EI}-\bar{R}_{EI})$ = -538.12

$Cov_{PI, EI} = 1/n\ \Sigma(R_{PI}- \bar{R}_{PI})\ (R_{EI}- \bar{R}_{EI})$=538.12/4= -134.53

Correlation = $Cov_{PI, EI} \ / \sigma_{PI}\, \sigma_{EI}$ = -134.53/231.40= -0.581

$$W_i = \frac{\sigma_j^2 - \rho_{ij} X \sigma_i X \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 X \rho_{ij} X \sigma_i X \sigma_j}$$

$$W_{PI} = \frac{(4.014)^2 - \{-0.581X57.65X4.014\}}{(57.65)^2 + (4.014)^2 - \{2 X 0.581 X 57.65 X 4.014\}}$$

= 0.042

W_{EI} = 1- 0.042

= 0.958

$E(R_P) = W_A X R_A + W_B X R_A$

= 0.042 X 20.06 + 0.958 X 4.436

= 5.09%

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2 Cov_{AB} W_A W_B}$$

$$= \sqrt{(0.042)^2 \text{ X } (57.65)^2 + (0.958)^2 \text{ X } (4.014)^2 + 2 \text{ X } -134.53 \text{ X } 0.042 \text{X } 0.958}$$

= 3.13%

ANNEX XX

Calculation of Cov between Himalayan General Insurance and Everest Insurance Company

Year	R_{HGI}	$R_{HGI} - \bar{R}_{HGI}$	R_{EI}	$R_{EI} - \bar{R}_{EI}$	$(R_{HGI} - \bar{R}_{HGI})(R_{EI} - \bar{R}_{EI})$
2006/07	61.79	24.19	2.766	-1.67	-40.39
2007/08	121	83.4	0.345	-4.049	-337.68
2008/09	-14.49	-52.09	4.810	0.374	-19.48
2009/010	-17.89	-55.49	9.824	5.388	-298.98
					$\Sigma(R_{HGI} - \bar{R}_{HGI})(R_{EI} - \bar{R}_{EI}) = -696.53$

$Cov_{HGI, EI} = 1/n \, \Sigma(R_{HGI} - \bar{R}_{HGI})(R_{EI} - \bar{R}_{EI}) = -696.53/4 = -174.13$

Correlation = $Cov_{HGI, EI} / \sigma_{HGI} \sigma_{EI} = -174.13/267.61 = -0.6506$

$$W_i = \frac{\sigma_j^2 - \rho_{ij} \text{ X } \sigma_i \text{ X } \sigma_j}{\sigma_i^2 + \sigma_j^2 - 2 \text{ X } \rho_{ij} \text{ X } \sigma_i \text{ X } \sigma_j}$$

$$(4.014)^2 - \{-0.6506 \text{X } 66.67 \text{X } 4.014\}$$

$$W_{HGI} = \frac{\qquad\qquad\qquad\qquad\qquad\qquad}{(66.67)^2 + (4.014)^2 - \{2 \text{ X } 0.6506 \text{ X } 66.67 \text{ X } 4.014\}}$$

$$= 0.040$$

$$W_{EI} = 1 - 0.040$$

$$= 0.96$$

$$E(R_P) = W_A \text{ X } R_A + W_B \text{ X } R_A$$

$$= 0.040 \text{ X } 37.60 + 0.96 \text{ X } 4.436$$

$$= 5.75\%$$

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2Cov_{AB} W_A W_B}$$

$$= \sqrt{(0.040)^2 \text{ X } (66.67)^2 + (0.96)^2 \text{ X } (4.014)^2 + 2 \text{ X } -174.13 \text{ X } 0.040 \text{X } 0.96}$$

$$= 2.92\%$$