CHAPTER - I
INTRODUCTION

1.1 General Background

Capital market plays crucial role in the national economy. The growth of economy is tied with the growth of capital market in the country. Now-a-day, finance has become very important factor of every business. Without the development of financial sector economic development of country is impossible. So, we can say development of financial sector is an indicator of economic development of the country. The managerial decision of any business is based on financial analysis. Therefore, finance is the backbone of the financial development.

Nepal is the least developed country. It has many obstacles for the development. There was no old history of industrialization in Nepal. Industrial revolution took place in Nepal with the establishment of Biratnagar Jute Mill in 1936 and Nepal Bank Ltd. in 1937. At the same time, shares were issued to general public. Along with their establishment followed the same trend and then slowly the system of trading securities took place, During that process financial sector started to collect unused deposit from public, mobilizing them in productive way and returning certain amount of their profit and benefit to the same public which on one hand deposited the economic standard of people, establishment entrepreneurship, increase trade transaction etc. and on the other hand it led the country towards economic progress.

Common stock financing is a long term source of financing of an organization. The fund raised from common stock is also known as equity capital and it is the first source of fund in any type of organization. The equity capital supports for borrowing to expand the business and activities.

In the stock market, the price of given stock is determine by the interacting forces of supply and demand. The brokers play important roles who act the purchase and sale of securities on behalf of the investors. In the highly develop securities market, there would be the presence of large number of brokers, as a result they are able to buy and sale securities on the investors behalf in a matt of minutes *(Sprecher; 1978)* but in Nepal, stock market is small, brokers are also quite few and stock market is an infant stage.

At present the expansion of stock market in Nepal is generally limited. The stock market of Nepal is small and it is at early stage of growth. There is a problem of systematic information between management of newly established Nepalese companies and investors who have poured their funds their in. Therefore, the country has not been able to realize the desired outcomes. There is need for efficient financial market where the people with surplus funds, interact with business firms which can utilize such funds efficiently *(Pradhan; 1992)*.

Nepalese stock market is relatively small and underdeveloped to compare with developed market. The history of Nepalese stock market begins with listing of share of 16 companies that first took place in 1986 (Pradhan, 1993: 24). In the beginning of the organized open outcry system, there was a break in stock market activities. Share price increased tremendously. The turn over volume was also high. The increased share price could not last for long and soon the prices begin to fall. That can be observed from the NEPSE index that was 97.78 in March 1993. It reached 254.29 in August 1994, 1084.76 in August 2008 and 313.64 in March 12, 2012 (NEPSE sub-Indices, Insurance is 390.5).

Among the financial sectors, insurance companies can b taken as one of the major contributing financial institution, insurance denotes contract, where by one party in consideration of money payment called premium, undertakes to indemnity another party against any less to pay to that party some agreed money on the happening of certain event.

Risks are the fact of life, which are products of uncertainly and its magnitude depends upon degree of variability in certain cash flow. Risk in fact is an indication of change of losing investment value. Our normal life and business are always concerned with uncertain risk of loss, so the insurance ie. Companies are there to compensate for such possible loss and same individual or institution by cash payment in return for a payment of small share as premium. Insurance companies help to deposit certain amount of money. In source of time, that money is return to the same people in order to recovers them for their loss. Investor always wants favorable return to the yield by its stock. They invest their belonging with an expectation of getting same reward for

learning ties security. Hence they only invest in that opportunity where they can get higher return and they think that higher return can be obtained from insurance companies trend of investing in insurance companies are increasing day by day in Nepal in the hope of favorable return and to recover from their loss. In Nepal, insurance companies are in gradual growth and they are becoming more varied and are also offering different types of benefit as by other financial institution and banking companies. Insurance companies were properly developed after 2025 B.S. and registered under insurance company act, 2025 B.S.

Table 1.1

Listed Insurance Companies in NEPSE

S.N.	Name of Company	Symbol	Listed Value	Paid up Value	Total Paid up Value
1.	Nepal Insurance Co.Ltd.	NICL	1,026,984	100	102698400
2.	Rastriya Beema Sansthan	RBS	995,138	100	99513800
3.	National Life Ins. Co. Ltd.	NLICL	2,570,959	100	257095900
4.	Himalayan Gen. Ins. Co, Ltd.	HGI	1,008,000	100	10080000
5.	United Ins. Co. Ltd.	UIC	1,008,000	100	10080000
6.	Everest Ins. Co. Ltd.	EIC	1,012,500	100	101250000
7.	Premier Ins. Co.Ltd.	PIC	1,020,000	100	102000000
8.	Neco Ins. Co. Ltd.	NIL	1,155,000	100	115500000
9.	Aliance Ins. Co. Ltd.	AIC	1,379,395	100	137939500
10.	Sagarmatha Ins. Co. Ltd.	SIC	1,021,020	100	102102000
11.	N.B. Ins. Co. Ltd.	NBIL	1,419,597	100	141959700
12.	Nepal Life Ins. Co. Ltd.	NLIC	3,738,745	100	373874500
13.	Life Ins. Co. Ltd.	LICN	2,500,000	100	250000000
14.	Prudential Ins. Co. Ltd.	PICL	1,000,000	100	100000000
15.	Lumbini General Co. Ltd.	LGIL	1,250,000	100	125000000
16.	Shikhare Ins. Co. Ltd.	SICL	1,250,000	100	125000000
17.	Siddhartha Ins. Co. Ltd.	SIL	1,000,000	100	100000000
18.	Asian Life Ins. Co. Ltd.	ALICL	3,600,000	100	360000000
19.	Prime Life Ins. Co. Ltd.	PLIC	3,600,000	100	360000000
20.	Gurans Life Ins. Co. Ltd.	GLICL	3,600,000	100	360000000
21.	Surya Life Insurance Co. Ltd.	SLICL	360.00.000	100	3600000000

Source: http:/www.nepal stock.com/listed company.php.

In the resent development there are 25 insurance companies, out of them 21 are listed in NEPSE and four are considered for the study purpose. They are :

- Everest Insurance Company Limited.
- Himalayan General Insurance Company Limited.
- Premier Insurance Company Limited.
- Sagarmatha Insurance Company Limited.

1.2 Statement of the Problem

Nepal is a developing country. Most of the people of Nepal lie below poverty line. Most of people do not have enough ideas of investment and they don't have enough money to invest in the same way those who want to invest also are poorly educated. So lack of ideas, information and knowledge is a great problem faced by individual investors who are being exploited by the financial institution and their market intermediaries to such an extent that is common stock is great hazardous. At the same time there is no separate institution, which provides risk and return on investment in our country there is no political establishment due to political condition government policy is found less encouraging in promoting common stock investment. So most of the investors are least familiar ideas of risk and return; even the university graduate can't analyze risk and return properly making stock investment decision. In context of Nepalese people, very few people analyze risk and return associated with the stock. Some people feel that here is more risk and some people feel that there is more return in such investment than real one. Followings are the research problems identified by this study.

- What are the criteria for evaluation that the stock are holding will give them favorable return?
- What should be the compensations have to receive for bearing the risk?
- How to know the magnitude of the risk?
- How can more higher return through risk?
- Is there favorable return receive for bearing the risk?

1.3 Objectives of the Study

The main aims of these studies are the risk associated with the non common stock investment and other variable that helps to decide about the stock and investment in insurance companies following are the specific objective of the study:

- To calculate the risk and return of the common stock and their portfolio.
- To identify the relation between return of insurance companies.
- To evaluate the systematic and unsystematic risk.
- To determined whether the share of insurance companies in Nepal are overpriced or underpriced.

1.4 Hypothesis

The hypothesis tests will be based on student 's' test 't' test is the test of significance for single or double mean, whose sample size is less than 30. This is also known as small sample test for mean.

Hypothesis 1

Null Hypothesis (H_o): There is no significance difference between the portfolio return of the common stocks of insurance companies and overall market return. In other words, average return on common stocks of insurance companies is equal to the market return.

Alternative Hypotheses (H_i): There is significance difference between the portfolio return of the common stocks of insurance companies and overall market return. In other words, average return on common stocks of insurance companies is not equal to the market return.

Hypothesis 2

Null Hypothesis (H_o): There is no significance difference between the portfolio of the common stocks of insurance companies and overall market beta. In other words, portfolio between common stocks of insurance companies is equal to the market beta.

Alternative Hypotheses (H_i): There is significance difference between the portfolio beta of the common stocks of insurance companies and overall market beta. In other words, portfolio beta on common stocks of insurance companies is not equal to the market beta.

1.5 Significance of the Study

Investment in stock plays vital role in the national economy. Capital market plays a crucial role in mobilizing a constant how of saving and channeling these financial resources for expanding productive capacity in the country. In the context of Nepal capital market is growing very slowly. Generally investors hesitate to invest on the common stock and some of the investors are invested without the knowledge of risk and return of common stock. Most of investors cannot analysis the risk and return associated with the investment and there are very few sources which gives information related to capital market and very few studies are made on the topic 'Risk and Return'.

This study target to explore and increases stock investment, it is known that investors invest by imaginary unreal risk this study gives information about Nepalese capital market by analyzing risk and return of Nepalese insurance companies and comparisons with other companies. So, this study will be beneficial fit all those persons who are directly or indirectly related to Nepalese capital market and also help to other research ease in the area of investment.

1.6 Limitations of the Study

The study is based on partial fulfillment of the requirement of the master's degree in business studies (MBS) so it will be limited by following:

- The time is limited
- The study will be based on common stocks of the insurance companies listed in the NEPSE. For the study only four insurance companies HGIC, SIC, PIC and EIC for five years period will be considered as sample study among 21 listed insurance companies.
- This study will be based on the secondary data dependent on annual reports, financial statements of different insurance companies published by NEPSE and also from the respective companies.

1.7 Organizations of the Study

This study will be organized into five chapters each chapter deals with the specific aspect of the study which are as follows:

Chapter -I Introduction

The first chapter contains the introducing part of the study. As describe above the major issued to be investigates along with the general background of the statement of the problem, objective of the study, need and signification of the study.

Chapter -II Review of Literature

Second chapter presents the theoretical analysis and review of literature.

Chapter -III Research Methodology

Third chapter describes the methodology employed in preparing the study. It deals with research design, population and sample, sources of data for the study. It briefly mentioned the data collection and analysis the technique.

Chapter -IV Presentation and Analysis of Data

Chapter is data presentation interpretation and analysis. It is the main body of the study. In this chapter, the risk and return of selected companies are analyzed. The result obtained is compared to example of portfolio analysis are presented and the co-relation between the selected companies also presented.

Chapter -V Summary, Conclusion and Recommendations

Last chapter present summary of the study and its implication and also presented in brief for convenience of the reader. This section also incorporates suggestions and an outlay for future research.

Last Annex and Bibliography are also included of the study.

CHAPTER – II
REVIEW OF LITERATURE

2.1 Introduction

Review of literature is an important chapter to fulfill the thesis report. This chapter deals with the theoretical aspects of the topic on risk and return on common stock investment in more detail and descriptive manner. For this study Journals articles and some research reports related with this topic has been reviewed. Although, more difficult to write this report because not more available related materials to this topic published in Nepal. So there are very limited study. This study has to refer almost all books related with this topic some of the master Degree thesis has also been reviewed. Unfortunately, so far nominal research has been performed in this topic in Nepal. Our stock market being in an emerging state is unable to provide information concerning to the studies.

2.1.1 Common Stock

Common stock financing is a long term source of financing of any companies. It is the first source of term in any type of companies or organization common stock represents ownership position in a corporative. It has a residual claim. A stock certificate is evidence that of fractional ownership it is tangible evidence. Preference shareholders and creditors must be paid before common stock shareholders can receive any payments.

"Stock is the ownership interest of a corporation each share of stock if fraction of the rights and privilege that belongs to the ownership of a business. A stock certificate is evidence that of fractional ownership, it is tangible evidence" *(Henderson Trennepaul and Wert; 1980).*

No fixed dividend rate on common stock. Dividend rate has been changing on common stock investment. "Common stocks have one important investment characteristics and one important speculative characteristic. Their investment value and average market price tend to increase irregularly but presently over the decades as their net worth builds up through the reinvestment of undistributed earnings. However

most of the time common stocks are subject to irrational and excessive price fluctuation in both directions, as the consequence of the ingrained tendency of most people to speculate or gamble i.e. to give way to hope fear and greed" *(Francis; 1992: 9).*

"Common stockholder of a corporation are its residual owners. Their claim to income and asset comes after creditors and preferences shareholders have been paid in full. As a result a stockholders return on investment is less certain than the return to lender or to preferred stock can be authorized either with or without par value. The par value of the stock is merely a stated figure in the corporate charter and is of little economic significance accompany should not issue stock at a price less than par value could be able to creditors for the difference between the below par price they paid and the par value" *(Van Horne, James; 1997 : 31).* But in case of Nepal as per the provision of Nepal Company Act 2057 no common stocks are allowed to issue without par value. Its par value most is either Rs. 10 or Rs. 100.

2.1.2 Stock Returns (The Expected Rate of Return on Common Stock)

Return is the reward to the investors for bearing certain risk. It can be defined as the after tax increase in the value of the investment. Investment decision is based on return, so based on most of investment decisions are completely based on future return of present investment. The expected rate of for any asset is the weighted average rate of return using the probability of each rate of return for as the weight *(Francis; 1992: 11).* It is based on the expected cash receipts (Dividend or interest) over the holding period and the excepted ending or selling price. The expected rate of return is an extant or unknown future return *(Cheney and Mosse ;1993 :34)* if the rate of return is guaranteed most investors recognize that several rate of return are possible investors then summarize the possible rates of return into a single number called the expected rate of return.

There is the relationship between expected return and the expected level of associated risk. The nature of the relationship is that as the level of expected risk. Increase the level of expected return is also increases. The relationship between risk and return is positive and direct relationship, if the investors can describe the possible rates of return and assign probabilities to these outcomes, the expected rate of return should

equal to the weighted average of the various possibilities. In other words, the expected rate of return is the weighted average of all possible returns multiplied by their respective probabilities. Probability distributions are used to describe possible outcomes and to assign individual probabilities from zero to one to each possible outcome. Therefore, the expected return E(cr) is calculated by summing up the product of the rates of return and their respective probabilities as follows.

$$\sum_{j=1}^{n} PjRj$$

Where,

$\bar{R}j$ = The Expected rate of return

Pj = Probability distribution of rates of return for j outcomes.

Rj = Rate of return for j Outcomes

N= Number of possible outcomes

According to (Van Horn 2000: 68) has proposed the CAPM developed by Harry M. Markowitz in 1959, the expected return for the individual security linking with the risk coefficient. According to him, expected return (R_1) for stock j (R_j) is:

$E(Rj) = Rf + [E(Rm) – Rf] \beta_j$

Where,

E(Rj) = Expected return for stock j.

Rf = Risk free rate

$E(R_m)$ = Expected return for the market portfolio

β_j = the Beta coefficient or systematic risk for security j.

He discussed that the relevant risk is not the standard of the security itself (total risk), but the marginal effect the security has in the standard deviation of an efficiently diversified portfolio (Systematic risks). As a result a security expected rate of return should be related to its degree of systematic risk, not to its degree of total risk, systematic risk is the thing that matters to an investor holding a well diversified portfolio.

2.1.3 Risk on Common Stocks

"Risk is defined in Webster's Dictionary as a hazard: a peril exposure to less or injury; thus for most 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"

It is a chance of happening some unfavorable event or danger of losing some material value. Investors make investment in financial assets with an expectation of earning certain rate of return. But there in no certainty of achieving such expectation such a possibility of earning less than expected earning is known as risk.

Risk is the variability of the return of a period, Risk is the variability of the return of a period, Risk has different meaning in different context. In our context to measure developed from the probability distribution have been used as initial measures of return and risk.

2.1.4 Systematic and Unsystematic Risk

Total risk or total variation of the rate of return for security individual or portfolio is measured by the standard deviation or variance of the rate of return. According to CAPM total Risk of an asset can be divided into two parts. They are diversifiable risk or non market risk and undiversifiable risk or market risk or beta risk.

Systematic and unsystematic risks are the terms frequently used in the portfolio context combining securities that are not perfect positively correlated helps to reduce the risk of a portfolio some extent. Systematic risk has its source factors that affect all the marketable assets and thus cannot be diversified away. Systematic risk is due to the risk factor that affects the overall market such as change in national economy tax reform by the government or changes in the world energy situation. Systematic risk is the portion of the total risk of an individual security can used by market factors that simultaneously affect the prices of all securities. It stems from factors, which simultaneously affect all firms, such as war, inflation, recession, high interest rates, depression and long term changes in consumption in the economy. 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:

$$\beta j = \frac{\text{Cov (Rm, Rj)}}{\sigma_m^2}$$

Where,

Cov (Rm, Rj) = Covariance between the returns of security j and market.

σ_m^2 = Variance of Market return

ρ_{jm} = Correlation between the return of security j and market.

Unsystematic risk is risk unique to a particular company or industry. It is independent of economy, political and other factor that affects all securities in systematic manner "For most stocks unsystematic risk accounts for between 60 to 70 percent of stocks total risk or standard deviation" *(Van Horne and Wachowiz; 1995: 9)*. This kind of risk can be reduced by diversification and even eliminated of diversion is efficient. Hence not all the risk involved in holding a stock is relevant since part of this stock is caused by events particulars to the firm like labour strikes, management errors, inventions etc. The relationship among systematic, unsystematic and total risk are shown below:

Total Risk (σ_j) = Systematic Risk + unsystematic Risk.

Where,

Systematic Risk = $\sigma_j \times \rho_{jm}$

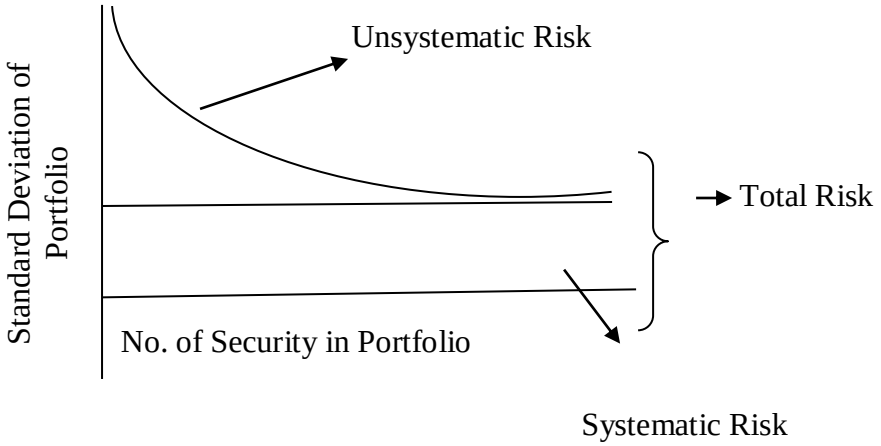
Unsystematic Risk = $\sigma_j (1 - \rho_{jm})$

Here,

ρ_{jm} is the correlation coefficient between the return of given stock (j) and the return on the market portfolio.

Figure 2.1

Systematic and Unsystematic Risk



2.1.5 Standard Deviation

The square root of the variance of the rate of return in called the standard deviation "The variance of an asset's rates of return equals the sum of products of square deviation of each possible rate of return from the expected rate of return multiplied by the probability that the rate of returns occurs".

Standard deviation measures the magnitude of difference between by possible return. So, standard deviation measures the degree of risk of common stock. Because we have defined risk as the variability of returns, we can measure risk by examining the tightness of the probability distribution associated with the possible outcome standard deviation is denoted by (σ) sigma.

$$\sigma j = \sqrt{\sum_{i=1}^{n} (R_i - \overline{R}_i)^2 P_j}$$

Where,

σj = Standard deviation of return on stock j during time period.

Rj = Holding period return on stock j.

Pj= Probability

$\overline{R}_i$ =Expected rate of return on stock j.

Standard deviation measures the variability of return. Standard deviation is the weighted average deviation from the expected value and it gives an idea of how far above or below expected value and the actual value likely to be. It's the statistical tool for measuring the risk. It measures the total risk of a security consisting both systematic and unsystematic risk. The lower value of standard deviation is acceptable. Standard deviation can sometimes be misleading in comparing the risk or uncertainty surrounding the alternatives if they differ in size. To adjust for the size standard deviation can be divided by the expected return to compute the coefficient of variance (C.V.)

Coefficient of Variance (C.V.) = $\frac{\sigma_j}{\overline{R}_j}$

Where,

σj = Standard deviation of return on stock j

$\overline{R}_i$ =Expected rate of return on stock j.

Thus, the coefficient of variance is a measure of relative dispersion (risk) a measure of risk per unit of expected return. The larger the coefficient of variation, the larger the relative risk of the investment.

2.1.6 Portfolio Analysis

A portfolio is a combination of investment assets. The portfolio is the holding of securities and investment in financial assets i.e. bond, stock. Portfolio management is related to the efficient portfolio investment in financial assets.

The main purpose of portfolio is to assure the normal return by minimizing the level of risk or portfolio is the combination of the more than single security of minimize the risk for stable return. The loss from one asset will be covered by gain from others so that the investor will get the stable by minimizing the level of return.

The portfolio theory was developed by Harry M. Markowitz on 1952 so it is also explained as the Markowitz Portfolio. Harry Markowitz was the first person to show quantitatively why and how diversification reduces risk. As the father of the modern portfolio theory Markowitz received the ' Nobel Prize in Economies' in 1990 for developing the theory of portfolio selection".

"Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities. Portfolio expected return is the weighted average of the expected return of the individual securities but portfolio variance can be something less than a weighted average of the security variance. As a result investors can sometime portfolio risk by adding another security with greater and individual risk than any other securities in portfolio" *(Valla; 2000: 63).*

Portfolio is collection of securities. The expected return of portfolio is simply a weighted average of the expected return of the securities containing in that portfolio but portfolio risk depends not only on the riskiness of the securities consisting the portfolio but also as the relationship among those securities. The optimal portfolio is that which is most suitable to the investor. Optimal portfolio shows us that us that it is possible for different portfolio to have varying level of risk and return so, each investor is free to decide how much risk can be handling and likewise to choose the best portfolio.

"Portfolio is defined as combination of assets. Portfolio of assets usually offer the advantage of reducing risk through diversification. Portfolio deals with the selection of optimal portfolio which provides the highest possible return for any specified degree of risk or the lowest possible for any specified rate of return. Since portfolio theory has been developed most thoroughly for the financial assets. Stocks and bonds we shall for the most part restrict our decision to those assets. However, extension of financial assets portfolio theory to physical assets are readily made and certainly the concepts are relevant in capital Budgeting" *(Weston and Copland; 1999: 133).*

2.1.6.1 Portfolio Return

Portfolio is a collection of securities since it is rarely describable to invest the entire funds of an individual or institution in a single security. It is essential that every security be viewed in a portfolio context. The expected return of a portfolio is simply a weighted average of expected return of the securities containing in that portfolio. The weights are the proportion of total funds investment in each securities or financial assets. The weight must sum i.e. 100%. The general formula for expected return of portfolio is given:

$$\overline{R}p = \sum_{t=1}^{n} W_j R_j$$

Where,

$\overline{R}p$ = Expected return of portfolio consisting on securities.

W_j = Proportion of wealth in invested in security j

R_j = Expected return of Security j

n= No. of securities in portfolio.

2.1.6.2 Portfolio Risk

The calculation of portfolio risk is not as straight forward as the calculation of portfolio expected return. In order to calculate the risk of a portfolio, consideration must be given not only to the risk of individual assets in the portfolio and their relative weight but also to the extent to which the assets return more together. "By combining the measures of individual assets risk (covariance or standard deviation) relative assets weights and the co-movement of assets return (correlation or covariance) the risk of the portfolio can be estimate".

Just as the risk of an individual asset is measured by the standard deviation or variance of its return, the risk of portfolio too is measured by the standard deviation and variance of their returns.

The standard deviation of a probability distribution of possible portfolio return is :

$$\sigma p = \sqrt{\sum_{j=1}^{n} \sum_{k=1}^{n}}$$

$$W_j\ W_k\ \sigma_{jk} = \sqrt{W_j 2\ \sigma j^2\ Wk^2 \sigma k^2 + 2 W_j W_{pjk}\ \sigma_j\ \sigma_k}$$

Where,

n= Total number of securities in a portfolio

Wj= Proportion of wealth invested in securities

Wk= Proportion of wealth invested in securities

σ_{jk} = Cov_{jk}= covariance between possible returns for security j and k.

The two $\sum$ means that we consider the covariance for all possible pair wise combination would be".

The covariance of the possible returns of two securities is a measure of the extent to which they are expected to very together rather than independently of each other. The covariance term in the given formula can be written as:

$Cov_{JK} = \sigma_{JK} = \rho_{JK} \times \sigma_J \times \sigma_K$

Where,

ρ_{JK} = Correlation coefficient between possible returns for security j & k

σ_j = Standard deviation for security j

σ_k = Standard Deviation for security k

The value of a correlation coefficient always lies in the range from -1 to +1. A correlation coefficient of 1 indicates that an increase in the return from one security is always associated with a proportional increase in the return for the other security a similarly for decrease. A correlation coefficient of -1 indicates that an increase in the return for one security is always associated with a proportional decrease in the return for the other security or vice versa. A zero coefficient indicates an absence of correlation so that the return of each security very independently of the other. However most stock returns tend to move together, so the correlation coefficient between two stocks is positive".

2.1.7 Capital Assets Pricing Model (CAPM)

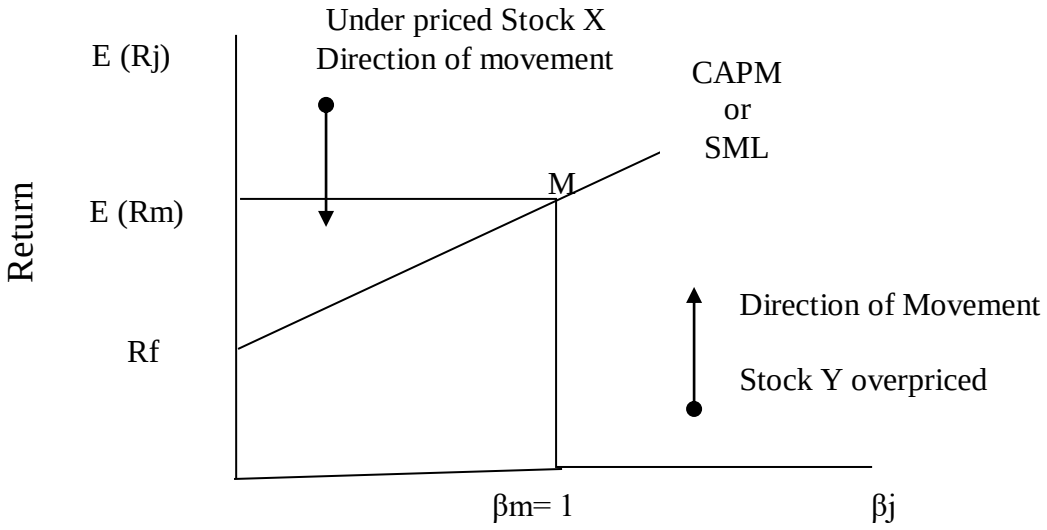
CAPM is a model that describes the relationship between risk and expected return that is used in the pricing of risky securities. The capital assets pricing model (CAPM) was introduced by Treynor (1961), Sharpe (1964) and Lintener (1965). It extended portfolio theory to introduce the notions of systematic and specific risk. CAPM says

that expected return of a security or a portfolio equals the rate on a risk free security plus a risk premium. If this expected return does not meet or beat the required return then investment should not be undertaken.

SML is the graphical representation of the CAPM, which shows the relationship between risk and required rate of return. The SML clearly shows that returns are the increasing function, in fact a linearly increasing function of risk. Further is is only market risk that affects return. The investor receives no added return for bearing the diversifiable risk. If stocks are under priced it lies above the SML. The following diagram shows the SML with priced and the under priced stocks.

Figure 2.2

Capital Assets Pricing Model (CAPM)



Above figure clarifies that stock X is under priced relative to security market line while stock y is overpriced. As a result stock x is expected to provide a rate of return greater than required based on its systematic risk. In contract stock y is expected to provide a lower return than that required to compensate for its systematic risk. Investors seeing the opportunity for the superior return by investing on stock X, will rush to buy. This action would drive the price up and the expected return comes 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 Y investor holding this stock will start to sell it, recognizing that they could obtain a higher return for same amount of systematic risk with other stocks. This selling

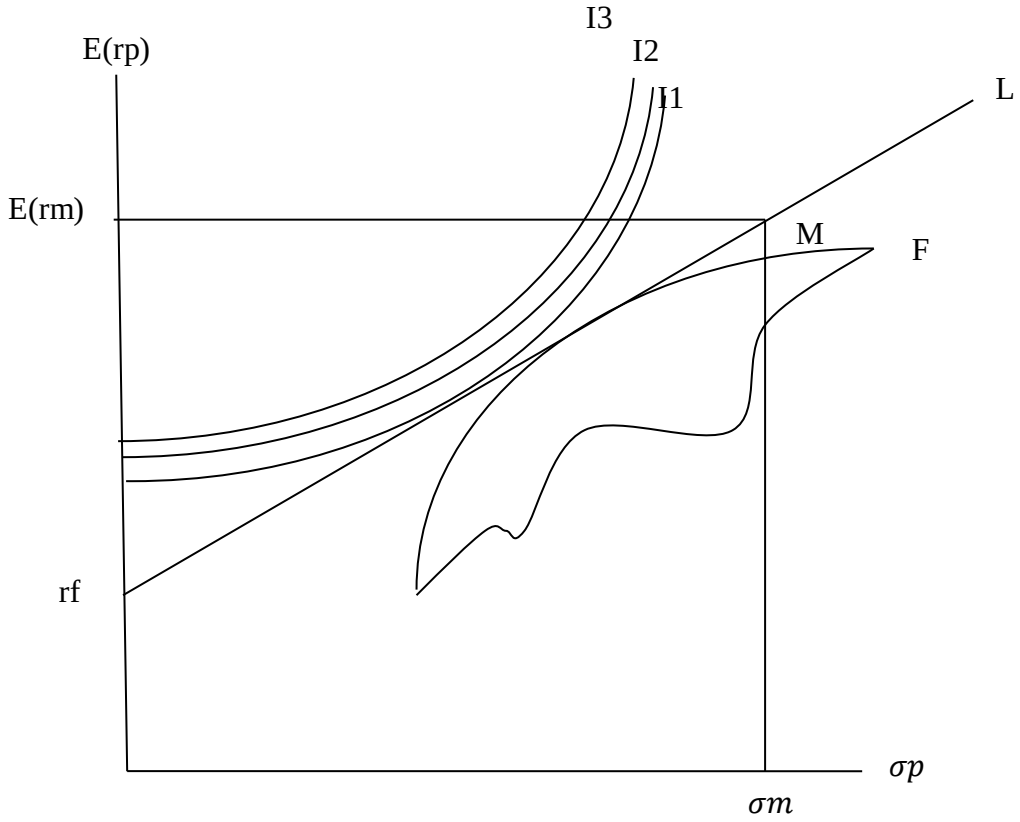
pressure would drive Y's market price down and its expected return goes up until the expected return match on the SML. "The CAPM is undoubtedly the most successful model to link the risk and the valuation of securities that follows, is the essence of the capital assets pricing model" *(Van Horne; 1999:97)*. Return can be calculated with comparing of two return investors can analyze whether the stock is overpriced or under priced.

2.1.8 Capital Market Line (CML)

Capital Market Line shows the market equilibrium tradeoff 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 efferent frontier is called a capital market line.

Figure 2.3

Capital Market Line (CML)



The CML starts with the risk free assets rf 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 rf. They are lending at their rate of risky free. The entire portfolio on the line between rf and M represents lending portfolio.

To the right of M, investors are borrowing at rf investing more in M they are utilizing leverage portfolio M is called 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 portfolio. It seems that capital market equilibrium relationship between risk and return for efficient portfolios consisting of various combinations of the risk free assets and the market portfolio. If the investors are to invest in risky securities they must receive a risk premium [E(rm) - Rf] to compensate for the added risk premium is an excess return over the risk free rate, expected for incurring the risk associated with the market portfolio, σm

The equation of CML is as follows:

$$\text{Slope of CML} = \frac{E(Rm) - Rf}{\sigma_m}$$

2.1.9 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 (Bj) higher level of non diversifiable risk caused higher required return on the security and vice-versa. Using the value of Bj we can write the SML equation as:

$E(R_j) = rf + [E(R_m) - Rf]\,\beta j$

2.2 Review of Related Studies

Chatargee 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 is collection but rather at its contribution to portfolio risk. That is dependent on the stocks sensitivity to changes the value of the portfolios. If the investors 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 borrowing and lending can be used to achieved 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 portfolio care should be taken to ensure that the portfolio does not exceed the risk bearing capacity of the investor. It is constructed in such way that it provides the highest return for a given acceptable level of risk.

Shrestha (2002) in his article, "*Changing Investment Portfolio of Rastrya Beema 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.

Pradhan (2002) has focused the legal frame work of financial distress and the extent of financial distress of Nepalese enterprises and moment of selected financial ratios with the financial distress. This paper is based on the study of more that 90 percent of public enterprises in operation during the late nineties. The time horizon of the secondary data included in this study in 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 interest coverage and finally it has concluded that Nepalese Public enterprises were suffering from financial distress during the study period.

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 relative 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.

2.3 Review of Articles

The article by Pandey (2011) "*Why Share Market is Instability*" was published in Karobar National Economic Daily. The major findings of this article are as follow:

- Political instability, government rules and regulation, economic strategy of political parties, the largest organization of the world are going to be collapse, world economic crises, the increasing price of the oil are the main cause to instability , the share market in Nepal.
- Most of the Nepalese investors are attraction to invest their capital in the derivative market issue of large number of share, poor knowledge of share market lack of capital high interest rate in share loan are the other causes to instability the share market in Nepal.
- So finally he concluded that if we want to improve the Nepalese share market the following works should be done
  - The interest rate of the share loans should be decreased.
  - The rule and regulation of the government should be changed.
  - The political instability should be end as soon as possible.
  - He advised those of the investors who are investing their capita in the share market not to sell the share in current situation. It is increasing after 1-3 years.

Dangol (2009) "*A Survey of Stock Market Reaction to Public Information (PYC)"* journal of management. According to his survey, he got following major findings:

- Share of commercial finance company developments finance company and finance companies were more popular among the Nepalese investors.
- Capital appreciation is the main important motive behind investing in the common stock.
- Based on the flow of new information most of the respondents have been found to have strong belier of impact of new information of price movements.

2.4 Review of Thesis

Acharya (2009) has submitted a thesis "*Risk and Return Analysis in Common Stock Investment of Some Listed Companies of Nepal*". This study used primary based on secondary source with 8 companies.

His main objectives:

- To assess the relationship between risk and return.
- To identify factors responsible for risk and return.

  The study used market prices per share, dividend per share, and other statistical tools to analysis the data. Acharya has pointed out various findings based on the data and information, which are given below:

His major finding:

- On the basis of industry wise comparison commercial banking industry's, expected rate of return is maximum while other industries expected return is lowest among the industries.
- The beta coefficient in this section of market sensitive analysis which measure the on the different assets. Beta coefficient of these eight sample companies showed mixed results. Five companies are defensive.

Manandhar (2010), the study performed by "*A Study of Risk and Return Analysis on Common Stock of Listed Commercial Bank in Nepal*". The main objective of the study is to analyze the risk and return and other relevant variables that help in making decisions about investment on securities of the listed commercial banks. The other specific objectives of this study are as follows:

His main Objectives

- To evaluate common stock of listed commercial bank in terms of risk and return and to perform sector wise comparison on the basis of market capitalization.
- To identify whether the share of commercial banks are overpriced, under priced or at equilibrium price.
- To identify the correlation between returns of commercial banks.
- To construct optimum portfolio from listed common stock.
- To make relevant suggestion and practical idea and materialize recommendations based on findings.

His Major Finding

- Among all the securities common stock is known to be must risky security.
- Higher the risk higher will be the return.
- Most of investors attached to common stock securities because of its higher expected returns.
- As for the investors it is important to analyze each investment company to pentagonal returns with the risk and average the potential returns from an investment should compensate for the level of risk undertaken.

Gyawali (2011) has conducted a research about "*Risk and Return on Common Stock*". Gyawali used secondary data analysis with five commercial banks covering 5 years. His Major Objectives of the study are as follows:

- To determine the risk, return and other relevant factors that directly affect the investment in common stock.
- To evaluate the common stock of the listed commercial banks in terms of risk and return to perform sector wise comparison on the basis of market capitalization.

His Major Findings:

- Among five commercial banks Standard Chartered Bank and Himalayan Bank is the continuous dividend payer.
- Among sample banks Nepal Bangladesh Bank Ltd. its has lowest expected return.
- Bangladesh Bank is high risky and Standard Chartered Bank is low risky.

Shrestha (2012) has conducted research on "*Stock Price Behavior in Nepal*". This study aims to examine the efficiency of stock market in Nepal. The objective of the study was:

- To examine the serial correlation of successive daily price changes of the individual stocks.
- To determine whether the sequence of price changes is consistent with change of the series of random numbers expected under the independent Bernoulli process.

- To provide feedback policy towards institutional development of efficient market.
- To determine the efficiency of the stock market through the theoretical model of efficient market hypothesis in Nepalese market.

His Major Findings:

- After applying the required models and methodologies he found average correlation coefficient of 0.2055, 0.0825 and 0.0704 for 1, 2 and 3 lag day's respectively and for lags 5 to 15 days were less than 0.07 in overall large number of serial correlation coefficients of the log price changes of the 30 stocks for the sample periods are significantly departed from zero.
- Most of the above all studies conducted by various researchers, it seems that Nepalese stock market is still in developing stage and its is facing various challenges. Furthermore it also shows that there are few research works.
- Most of the above stated studies use technical methods and statistical methods like run test, correlation coefficient, NEPSE trend etc. for the analysis purpose. Only few of the studies use fundamental analysis tools for the research work more than that of none of the studies uses fundamental analysis tools for the research work. More than that none of the studies are concerned about the financial indicators like EPS, DPS and NWPS which are the most influencing factors for the MPs. So, this study tries to analyze the relationship of these factors with the pricing behavior of the stock of the selected companies as well as it also tries to show the influence of the important events happened in the country on market price of the stock.

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

3.1 Introduction

This chapter describes the methodology employed to fulfill the objective of the study. Research methodology may be defined as the systematic process applied by the researcher in studying research problem with certain objectives in vies. A research methodology helps to find out accuracy, validity and suitability of our study.

Research may be defined as a systematic objective analysis and recording of controlled observation that may lead to the development of generalization, principles of theories resulting imprecision and possibly ultimate control of event. Research may be understood as a science of studying how research is done scientifically. Research is directed towards as a solution and in based on observable experience and empirical evidence and it demands accurate observation and description.

This chapter refers to the overall research method from the theoretical aspect to the collection and analysis of data. This study covers qualitative methodology in a greatest extends and also uses the descriptive part based on both technical and logical aspect. On the basis of historical data, performs a well designed quantitative research is very clear and direct way using both financial and statistical tools. Details of research methods and described under following headings.

3.2 Research Design

The research design is a study acts as a general framework for carrying out it. According to Kerlinger "research design is the plan, structure and the strategy of investigation conceived so as to obtain answer to the research question and to control variance" *(Kerlinger; 1968: 275)*. Hence research design is a road map by which the researcher reaches his/her objective correctly on time. Research design is planned, structure and strategy of investigation. Confined so as to insurers to research question and to control variance, the research design followed in this study is descriptive and analytical one the study will covers data of five years starting from Fly 2063/64 to 2067/68. It deals with the risk and return of insurance companies on the basis of available data.

3.3 Population and Sample

Population of the study is all insurance companies listed in the NEPSE but as a sample, will have included five insurance companies in thesis name PIC, HGIC, EIC and STC.

3.4 Data Collection Procedures

This study is strictly based on the secondary data, which has been published in books, booklets and magazines. Most of the data will be taken from the annual reports and financial statements of different insurance companies published by NEPSE and also from respective companies.

3.5 Method of Analysis and Presentation

Method of analysis are applied as sample as possible results are presented in tabular form and clear interpretations on it are given simultaneously. The collected data are analyzed by using various financial and statistical tools, which are presented below :

3.5.1 Financial Tools

Earnings per Share

Earning refers to the net income after taxes. It can be obtained by dividing net income by common stock outstanding symbolically it is represented as

$$\text{EPS (Earning per share)} = \frac{\text{Net Income After Taxes}}{\text{Number of Common Stock Outstanding}}$$

Market Price Per Share

One of the major data of this study is market price o stock there are three price records available i.e. low, high and closing price of each year so two approaches either average price of (high or low) or closing price can be used main argument of average price may be that it represents the price of whole year. But to get the real average value and price of each transactions in the whole year are essential it is very difficult to obtain and include all these information and average of high and low price may not be reliable and representatives information. Hence closing price is used as market price of stock which has a asperity time span of one year and the study has focused in annual basis.

Dividend

Common stock holders are rewired through dividend. Dividend is the part of earning which is distributed to the share holder by the decision of board o directors. It is usually distributed from retained earning it is useful in the computation of realized rate of return.

Symbolically

Dividend per share = $\frac{\text{Total Amount of Dividend Paid}}{\text{No.of Common Stock Outstanding}}$

If a company declares stock only cash dividend, there were no problem to take dividend amount but if company declared stock dividend (Bonus share) it is difficult to obtain the amount that has gained by the shareholders. In this case they get extra number of share s dividend and simultaneously price of the stock declares as result of increased number of stocks to get a real amount of dividends there is no any formulas. So, the model has been developed considering practical as well as theoretical aspects.

Expected Return of Common Stock (R)

The expected rate of return is the arithmetical means of the past year return symbolically:

$\bar{R}_j = \frac{\Sigma R_j}{n}$

Where,

$\bar{R}_j$ = Expected rate of return of stock

N = Number of year that the return is taken

Σ = Sign of summation

Return of Common Stock

Return is the income received on an investment plus any changes in market price, usually expressed as a percent of the beginning market price of the investment

Symbolically Rt = $\frac{D_t+(P_t+P_{t-1})}{P_t-1}$

Where,

R_t = annual rate of return on common stock

D_t = Cash dividend received at time t

P_t = price of stock at time t

P_{t-1} = Price of stock at time (t-1)

Standard Deviation (σ)

The square root of the variance of the rate of return is called the standard deviation or the standard deviation is defined as the positive square root of average sum of squares of deviation from the arithmetic mean of distribution. Alternatively it can be calculated as a weighted deviation from the expected return considering both the rate of return and probabilities associated with the return (the large is the standard deviation the greater is the volatility of he return from any investment). The standard deviation is calculated using the following formula

$$\sigma = \sqrt{\frac{\Sigma(R_j - \bar{R}_j)^2}{n-1}}$$

Where,

σ = Standard deviation of return of stock during time period

R_j = Holding period return

$\bar{R}_j$ = Expected rate of return on Stock j

Coefficient of Variance (C.V.)

The relative measures of variation based on the standard deviation is known as the coefficient of variation. Coefficient of variation measures the risk per unit of expected return. It is measure of relative risk. The coefficient of variation is calculated usin the following formula.

Coefficient of Variance (C.V) = $\frac{\sigma}{R_j}$

Where,

σ_j = Standard deviation of return on Stocks j

$\bar{R}_j$ = expected rate of return of stock

Beta (β)

To define it total risk can be classified as the diversifiable (Nonsystematic) risk. It measures the sensitively of a stock's return on the market portfolio market portfolio created from the securities of total risk. It is an index of systematic risk. Systematic is represented by beta β which can be measured securities with beta more than market beta ($\beta_m = 1$) are classified as more risky (aggressive), and securities with beta less than market beta as less risky (defensive) in comparison with the market risk. The beta coefficient is calculate by using the following formula

$$\beta_J = \frac{Cov\ R_j R_m}{\sigma^2 m}$$

Where,

β_j = Beta Coefficient of Stock J

Cov (R_j R_m) = Covariance between R_j and R_m is equal to $cov_{jm} = \frac{\Sigma(Rj\ \overline{-R}j)\ (R_m - \bar{R}_m)}{n-1}$

σ_m^2 = Variance of market rerun.

Market Sensitivity

Market sensitivity of stock is the systematic risk that is measures by it beta coefficient. Systematic risk is the risks that cannot be reduce by diversification. Higher beta represents greater sensitively and higher relation to the market movement and lower beta represents lower sensitivity and lower relation to the market movement. Greater beta means higher risk and return. It measures market the responsiveness of a security movement in the market portfolio.

Depending upon the volatile of the stock return relative to market return for an individual stock, beta coefficient be less than more than or equal to 1.

$$B_j = \frac{cov\ (R_{jR_m})}{\sigma^2 m}$$

Where

Cov_{RjRm}= Correlation between market return and stock return.

Hence,

$\beta_j = \frac{cov\ (R_{jR_m})}{\sigma^2 m}$

Where,

$Cov_{jm} = \frac{\sum(R_j - \overline{R_J})(R_m - \overline{R_m})}{n-1} = \frac{\Sigma(R_j - \bar{R}_j)\ (R_m - \bar{R}_m)}{n\text{-}1}$

Interpretation of beta:

β_j= 0.5 stock is only half as volatile

β_j=1.0 stock is of average risk

β_j= 2:0 stock is twice as risky as the average stock

Stock beta coefficient determines how of affects their riskiness of a diversified portfolio .beta is the most relevant measure of stock risk.

Beta coefficient of market is always 1. This statement can be proved as follows:

$\beta_j = \frac{CovR_jR_m}{\sigma_m^2}$

Where, ρ_{jm} = correlation between market return an stock return

$\beta_m = \frac{Cov_{RmRm}}{\sigma_m^2} = \frac{\rho_{mm} \times \sigma_m \times \sigma_m}{\sigma_m^2} = \rho_{mm} = 1$

Hence, therefore the beta coefficient of market is allays equal to 1.

Correlation Coefficient

The correlation is also a measure of the relationship between two assets. The correlation coefficient can take on a value from -1 to +1 correlation and covariance are related by the following equation

$Cov_{ij} = \rho_{ij} \times \sigma_i \times \sigma_j$

Therefore,

$$\rho_{ij} = \frac{Cov_{ij}}{\sigma_i \times \sigma_j}$$

There are various cases of correlation and risk condition which are given below

Perfect positive correlation (ρ_{ij+1})

Perfect negative correlation ($\rho_{ij} = -1$)

No relationship between return ($\rho_{ij} = o$)

Intermediate risk ($\rho_{ij} = +0.5$)

Portfolio Return

Portfolio average return, $\bar{R}_p$, is simply the weighted average of the average returns on the individual assets in the portfolio with the weights being the fraction of the total portfolio invested in each asset. Weight of an asset in a portfolio is the proportion of the fund invested in the asset. The sum of weight of all assets in a portfolio always must be one because investor spread his/her funds among the assets. The portfolio average return for a portfolio is:

$$\bar{R}_p = \sum_{j=1}^{n} W_j \bar{R}_j = W_1 \bar{R}_1 + W_2 \bar{R}_2 + \ldots + W_n \bar{R}_n$$

Where, $\bar{R}_P$ = the expected return on portfolio; n = the number of stocks in the portfolio; W_j = the proportion of the portfolio invested in stock j, and $\bar{R}_1$ = the expected return on stock 1.

Portfolio Risk

The variance of return and standard deviation of return are alternative statistical measures used to measuring portfolio risk. These statistics measure the extent to which returns are expected to vary around an average over time. Portfolio risk is not simply a weighted average of the individual security risks. For calculating the risk of a portfolio of assets, the riskiness of each asset, weight, and relation between assets are considered. Therefore the portfolio risk (portfolio variance or standard deviation) is the function of the standard deviations, weights, and correlation or covariance.

For two assets case:

$$\sigma_P^2 = \sigma_1^2 \times W_1^2 + \sigma_2^2 \times W_2^2 + 2\, W_1 W_2\, Cov_{12}$$

$$\sigma_P = \sqrt{\sigma_1^2 \times W_1^2 + \sigma_2^2 \times W_2^2 + 2\, W_1 W_2\, Cov_{12}}$$

We know Cov_{12} equals to $\rho_{12}\, \sigma_1\, \sigma_2$, we can rewrite the above equations as follows:

$$\sigma_P^2 = W_1^2 \times \sigma_1^2 + W_2^2 \times \sigma_2^2 + 2\, W_1 W_2\, \rho_{12}\, \sigma_1\, \sigma_2$$

$$\sigma_P = \sqrt{W_1^2 \times \sigma_1^2 + W_2^2 \times \sigma_2^2 + 2\, W_1 W_2\, \rho_{12}\, \sigma_1\, \sigma_2}$$

Portfolio Beta

Portfolios have various individual assets. Each asset has individual beta and proportion of wealth invested in each asset. The beta of the portfolio is the weighted average of the beta of assets in the portfolio. Portfolio beta can be used to calculate the required return on the portfolio.

To determine the beta for a portfolio, we simply calculate a weighted average of the betas of the individual securities making up the portfolio as follows:

$$\beta_P = \sum_{i=1}^{n} W_i \times \beta_i = W_1 \beta_1 + W_2 \beta_2 + W_3 \beta_3 + \ldots + W_n \beta_n$$

Where, β_P = The portfolio beta, W_1 = Proportion of wealth invested in stock 1, β_1 = Beta of stock 1, n = Number of securities in the portfolio

Risk Minimizing Portfolio

In a two-asset portfolio, some particular combination of the two assets will result in the least possible variance. The same is true of larger portfolios: some combination produces the lowest variance. This portfolio is called the minimum variance portfolio.

Minimum variance portfolio is also known as minimum risk portfolio or minimum standard deviation portfolio. This portfolio refers to the portfolio that has the least risk among all the possible portfolios. The most risk averse investor may be interested in such a portfolio. The following equation is used to calculate the weight of minimum variance portfolio.

$$W_A = \frac{\sigma_B^2 - Cov_{AB}}{\sigma_A^2 + \sigma_B^2 - 2 \times Cov_{AB}}$$

Where, W_A is the weight of asset A, σ_A^2 is variance of asset A, ρ_{AB} is the correlation between asset A and B, σ_B^2 is the variance of asset B, σ_A is the standard deviation of A, σ_B is the standard deviation of B.

When we find the weight of asset A, weight of asset B can easily be found by subtracting W_A from 1, that is $W_B = 1 - W_A$.

Required rate of return

It is the amount which an investor wants if he makes an investment without this amount an investor is not likely to invest his fund. It is always greater than risk free rate of return. This rate helps us to decide whether the stock in under priced or overprice and we will easily take decision about the securities under priced assets are purchased whereas overpriced assets must be sold symbolically it is expressed as.

Required rate of return $R_j = R_f + (\bar{R}_m - R_f)\ \beta_j$

Where,

$\bar{R}_j$ = Required rate of return on security j

R_f = Risk free rate of return.

$\bar{R}_m$ = expected rate o return on market

β_j = Beta coefficient on security j

3.5.2 Statistical Tools

Tools for testing hypothesis

Test of significant for a single mean is applied for hypothesis testing to test whether there is any significance difference between the portfolio beta of insurance companies and the market beta or vice versa. If the test of significance for a single mean the test of.

Statistics is $t = \frac{\bar{x} - ll}{\frac{5}{\sqrt{n}}}$

Where,

t = Student's test Statistics

$\bar{X}$ = Arithmetic mean of population parameter

S = estimates standard deviation of population parameter which is given as

S = $\sqrt{\frac{\Sigma(x-\bar{X})^2}{n-1}}$ if deviation is taken from actual mean

D = x – A

S = $\sqrt{\frac{1}{n-1}\ [\Sigma d^2 - (\frac{\Sigma d}{n})^2}$ If deviation is taken from assumed mean

Where ,

A = Assumed mean

N = Sample Size

Test result

If t calculates value ≤ tabulated value accepts the null hypothesis or vice versa

3.5.3 Research Methodology

The study is more analytical and empirical it covers quantitative methodology using financial and statistical tools result is presented in a very clear and simple way.

Description and Data Sample

This study is performed in the basis of past data. It covers the five years period. The data used for analysis are from the fiscal year 2006/07 to 2010/11. Altogether all together 21 insurance companies listed on NEPSE but only four insurance company are taken as sample.

Methods of Data Collection

Data are collected from different annual reports and financial statements of different insurance companies publish by NEPSE and also from respective companies.

Source of Data

Data collected are mainly form secondary source related financial books, booklet and magazines have also been studies and some related with the topic are taken from

different website of internet. NEPSE periodicals articles and previous research reports are also considered.

Tools of Analysis

On the basis of past data financial and statistical both tools have been used to perform this study. Financial tools include calculation of market price dividend amount expected returns risk of the individual and portfolio statistical tools represent the correlation coefficient and hypothesis testing.

3.5.4 Hypothesis

The hypothesis tests are based on students test't' test is the test of significance for single or double mean whose sample size is less than 3o, this is also known as small sample test for mean.

Hypothesis

Null Hypothesis (H_o)

There is no significance difference between the portfolio return of the common stocks of insurance companies and overall market return. In other words average return on common stocks of insurance companies is equal to the market return

Alternative Hypothesis (H_1)

There is significance difference between the portfolio return of he common stocks of insurance companies and overall market return. In other words, overage return on common stocks of insurance companies is equal o the market return.

Hypothesis 2

Null Hypothesis (H_o)

There is no significant difference, between the portfolio beta of the common stock of insurance companies and overall market beta. In other words portfolio beta on common stock of insurance companies is equal to the market beta.

Alternative Hypothesis (H_1)

There is significances difference between the portfolio beta of the common stocks of insurance companies and overall market beta. In other words portfolio beta on common stocks of insurance companies is not equal to the market beta .

CHAPTER – IV

PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

This chapter is the main body of the study. In this chapter includes the detailed collected data of market price of share dividend per share, and earnings per share of insurance companies as well as NEPSE index of each industry are presented and their analysis are done. The standard deviation is used to measure diversify risk. 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.

4.2 Analysis of Data of Sample Insurance Companies

In this chapter selected companies are analyzed separately. The data has been collected from the annual report 2010/11 of SEBO, annual financial report of respective insurance companies' report of NRB and annual report of NEPSE. There are altogether 21 insurance company listed in Nepal stock exchange and among which four sample insurance companies are taken for study and comparative analysis is done from the result obtained from the calculation. They are as follows:

- Premier Insurance Company (PIC)
- Himalayan General Insurance Company (HGIC)
- Everest Insurance Company (EIC)
- Sagarmatha Insurance Company (SIC)

4.2.1 Premier Insurance Company 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. It has authorized capital of Rs. 200 million, Issue Capital of Rs. 120 million and Paidup Capital of Rs. 1.02 million@Rs.100 each. Total No. of shares 1020000, market capitalization Rs. 157.08 million.

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.

Table 4.1

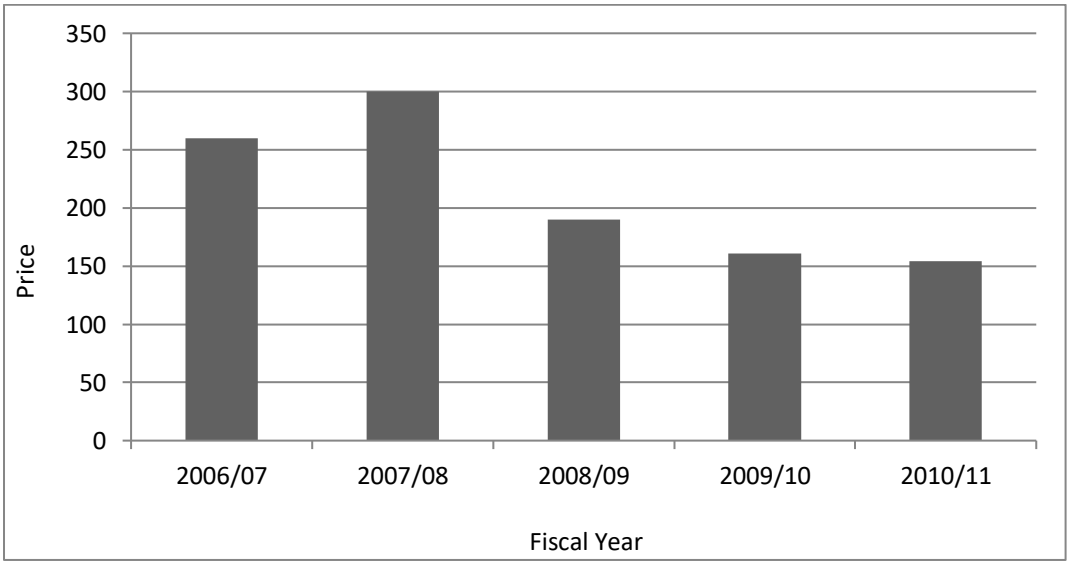
MPS and DPS of Premier Insurance Company

Fiscal Year	High MPS	Low MPS	Closing MPS	DPS	Stock Dividend	Total Dividend
2006/07	201	200	260	5.79	0	5.79
2007/08	318	260	300	0	1:1.1	2.09
2008/09	191	160	190	10.53	0	10.53
2009/10	163	154	161	0	0	0
2010/11	167	154	154	0	0	0

Source: NEPSE

Figure 4.1

MPS of Premier Insurance Company



From the figure it is clear that the market price per share of PIC has started to rise from the Fiscal Year 2006/07 till FY 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 2010/11. The company has distributed cash dividend of Rs. 5.79 and Rs. 10.53 per share in the FY 2006/07 and FY 2008/09 respectively. The company has distributed stock dividend of 1:1.1 in the FY 2007/08.

Table 4.2

Expected Return Standard Deviation and Coefficient of Variation of Premier Insurance Company

Fiscal Year	**Closing MPS**	**Dividend Per Share**	$R\% = [\frac{(P_t - P_{t-1})}{P_t - 1} + D_t]x100$	$R - \bar{R}$	$(R - \bar{R})^2$
2006/07	260	5.79	0	0	0
2007/08	300	2.09	95.76	84.54	7147.01
2008/09	190	10.53	-33.15	-44.37	1968.70
2009/10	161	0	-15.26	-26.48	701.19
2010/11	157	0	-2.45	-13.7	187.69

Source: NEPSE

$\sum (R - \bar{R})^2 = 10004.58$

$\text{E}(\bar{R}) = \frac{\Sigma R}{n} = \frac{44.87}{4} = 11.22$

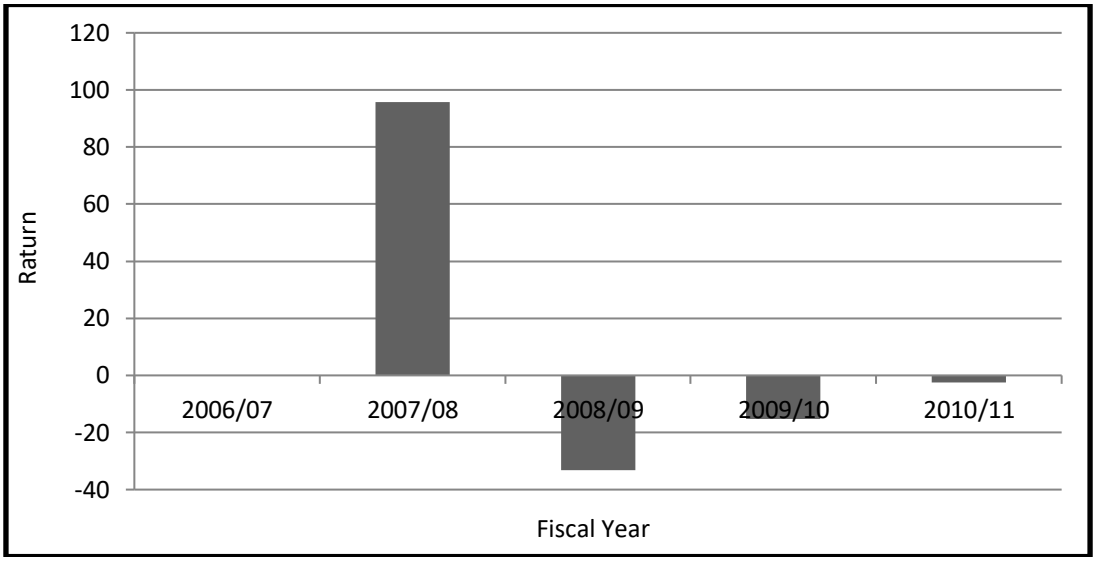
$\sum R = 44.87$

$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{10004.58}{4-1}} = \sqrt{3334.86} = 57.74$

$\text{Coefficient of Variation (CV)} = \frac{\sigma}{\bar{R}} = \frac{57.74}{11.22} = 5.15$

Figure 4.2

Annual Rate of Return of Common Stock of PIC



In the table 4.2 mean return of PIC is 11.22% and coefficient of variance is 5.15. The figure 4.2 shows the highest return of 95.76% in the FY 2007/08 and negative return of -33.15, -15.26 and -2.48 in the FY 2008/09, 2009/10 and 2010/11 respectively.

4.2.2 Himalayan General Insurance Company Ltd.

Himalayan General Insurance Company Ltd. was established under the company Act, 1964 in 1988 with an objective of undertaking no life and re-insurance business from insurance board under insurance act, 1992 and started business from November, 1993 AD. HGIC got listed on stock exchange on 1994 AD. The share holding pattern of the company is bifurcated as 60% share owned by promoters and 40% by general public. At the end of FY 2010/11 authorized capital issued capital and paid up capital were 16 million share@ Rs. 100 each, Rs. 90000000 and Rs.100800000 respectively. No. of shareholders are 1992000 Market capitalization Rs. 201.6 million.

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 shareholders are shown in the Table 4.3.

Table 4.3

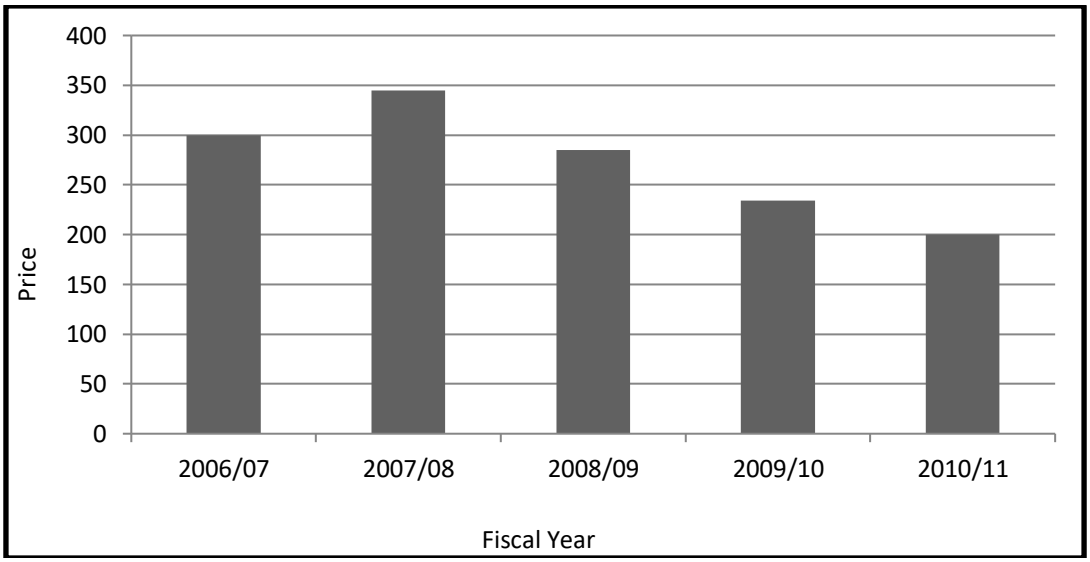
MPS and DPS of HGIC

Fiscal Year	High MPS	Low MPS	Closing MPS	OPS	Stock Dividend	Total Dividend
2006/07	300	198	300	5.79	0	5.79
2007/08	348	315	345	5.26	1:1.1	318.76
2008/09	270	205	285	10	0	10
2009/10	228	202	234	0	0	0
2010/11	234	198	200	0	0	0

Source: NEPSE

Figure 4.3

MPS and DPS of HGIC



From the figure it is clear that the market price per share of Himalayan General Insurance Company has started to rise from the FY 2006/07 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 2010/11. The company has distributed cash dividend of Rs. 5.79 and Rs. 10 per share in the FY 2006/07 and 2008/09. The company also paid stock dividend of 1:1.1 and cash dividend of Rs. 5.26 in the FY 2007/08.

Table 4.4

Expected Return Standard Deviation and Coefficient of Variation of Himalayan General Insurance Company

Fiscal Year	Closing MPS	Dividend Per Share	$R\% = [\frac{(P_t - P_{t-1})}{P_t - 1} + D_t]x100$	$R - \overline{R}$	$(R - \overline{R})^2$
2006/07	300	5.79	0	0	0
2007/08	345	318.76	21	102.47	10500
2008/09	285	10	-14.49	33.02	1090.32
2009/10	234	0	-17.89	-36.42	1326
2010/11	200	0	-14.52	-33.05	1092

Source: NEPSE

$\sum (R - \overline{R})^2 = 14008$

$\sum R = 74.1$

Expected Return $\sum (\overline{R}) = \frac{\sum R}{n} = \frac{74.1}{4} = 18.53$

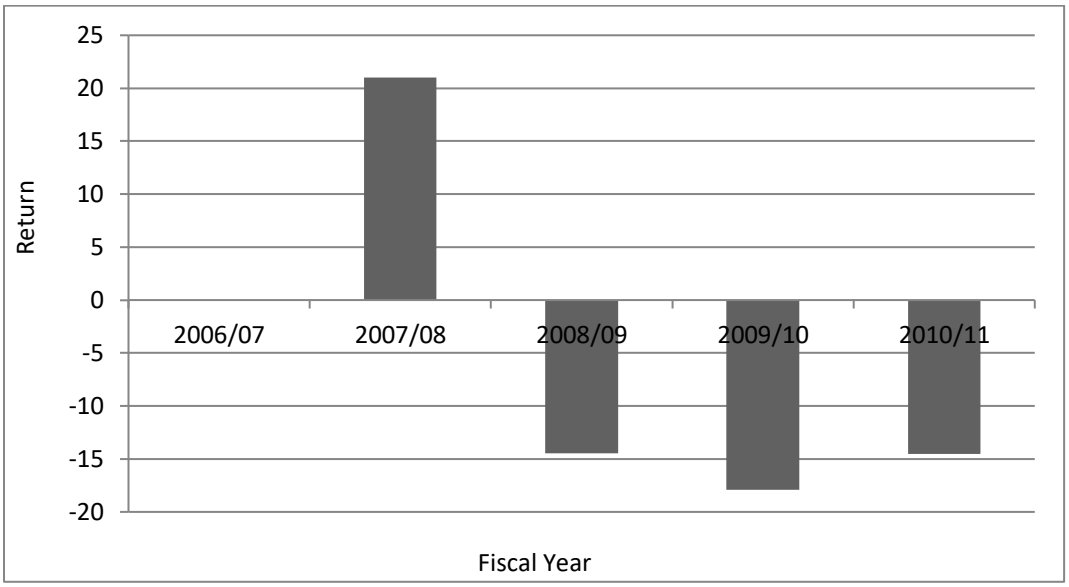
Standard Deviation $(\sigma) = \sqrt{\frac{\sum (R - \overline{R})^2}{n-1}} = \sqrt{\frac{14008}{4-1}} = \sqrt{4669.33} = 68.33$

Coefficient of Variation (CV) $= \frac{\sigma}{\overline{R}} = \frac{68.33}{18.53} = 3.69$

The above table shows realized return, expiated return, standard deviation and coefficient of variation of HGIC. The realized return and expected return of HGIC is 74.1 and 18.53 respectively, where as it standard deviation and CV is 68.33 and 3.69 respectively. This means that for earning one extra unit of return from the share of HGIC investors have to bear 3.69 unit of risk.

Figure 4.4

Expected Return Standard Deviation and Coefficient of Variation of Himalayan General Insurance Company



In the table 4.4 mean return of HGIC is 18.53 which is highest as compared to market return 18.83%. The standard deviation is 68.33% and coefficient of variance is 3.68. The figure 4.4 shows the highest return of 121% in the FY 2007/08 and negative return of 14.49, 17.89% and -14.52 in the FY 2008/09, 2009/10 and 2010/11 respectively.

4.2.3 Everest Insurance Company Ltd.

Everest Insurance Company Ltd. was established as public company in the year 1985 under the company Act, 1964. It was listed with NEPSE in 1995 AD (12/2015 B.S). The shareholders of EIC are 60% from promoters and 40% from general public. The total numbers of shareholders till fiscal year 2009/10 are 4905. The company has authorized capital Rs. 150000000, issued capital 105000000 and paid up capital Rs. 101250000, the market capitalization is Rs. 313.88 million at the end of fiscal year 2010/11.

Table 4.5

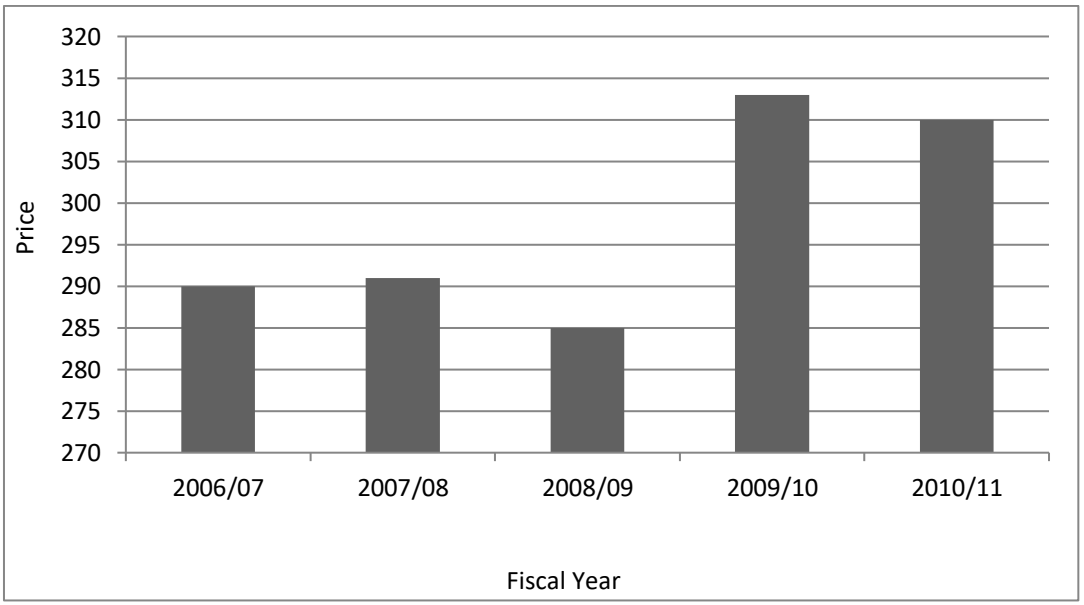
MPS and DPS of Everest Insurance Company Ltd.

Fiscal Year	High MPS	Low MPS	Closing MPS	OPS	Stock Dividend	Total Dividend
2006/07	295	280	290	13.16	0	13.16
2007/08	333	280	291	0	0	0
2008/09	310	275	285	20	0	20
2009/10	297	230	313	0	0	0
2010/11	315	285	310	0	0	0

Source: NEPSE

Figure 4.5

MPS and DPS of Everest Insurance Company Ltd.



From the figure it is clear that 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 2007/08 and in the year 2008/09 which is the lowest market price per share and the highest MPS in the fiscal year 2009/10. The company has not distributed any stock dividend to shareholder in the five years period. The company has distributed a cash dividend of Rs. 13.16 in fiscal year 2006/07 and Rs. 20 in the fiscal year 2008/09.

Table 4.6

Expected Return Standard Deviation and Coefficient of Variation of Everest Insurance Company

Fiscal Year	Closing MPS	Dividend Per Share	$R\% = [\frac{(P_t - P_{t-1})}{P_t - 1} + D_t]x100$	$R - \overline{R}$	$(R - \overline{R})^2$
2006/07	290	13.16	0		
2007/08	291	0	0.345	-3.16	9.9856
2008/09	285	20	4.810	1.305	1.7030
2009/10	313	0	9.824	6.319	39.9297
2010/11	310	0	-0.958	-4.463	19.9183

Source : NEPSE

$\sum$ R= 14.021

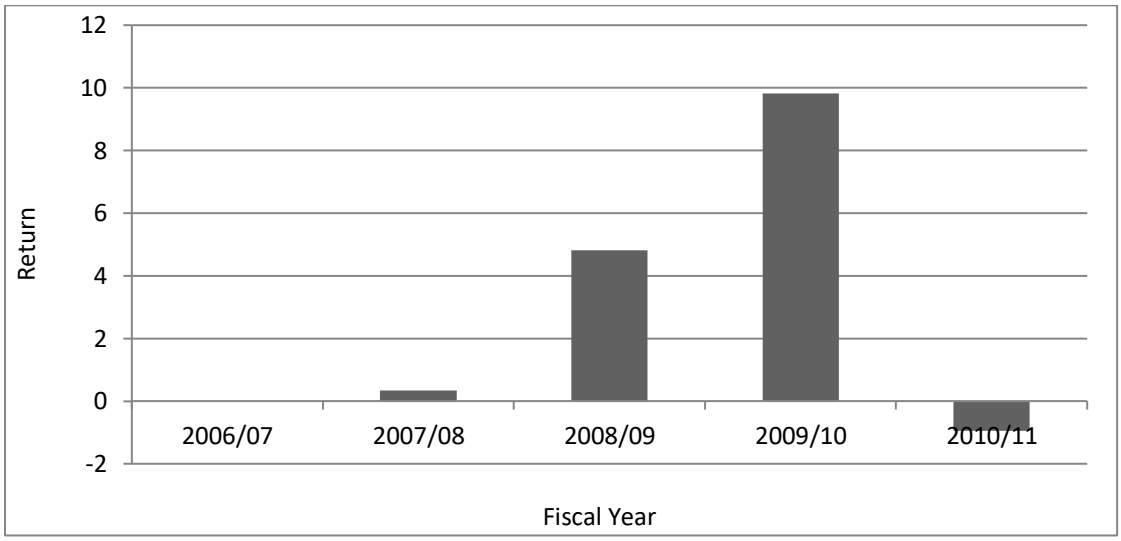
$\sum(R - \bar{R})^2$ =71.5366

Expected Return $\sum(\bar{R}) = \frac{\sum R}{n} = \frac{14.021}{4}$ =3.505

Standard Deviation (σ) = $\sqrt{\frac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\frac{71.5366}{3}} = \sqrt{23.8455}$ =4.88

Coefficient of Variation (CV) = $\frac{\sigma}{\bar{R}} = \frac{4.88}{3.505}$ =1.39

Figure 4.6
Expected Return Standard Deviation and Coefficient of Variation of Everest Insurance Company



In the table 4.6 mean return of EIC is 3.51% which is lowest as compared to market return 18.83%. The standard deviation is 4.88% and coefficient of variance is 1.39. The figure 4.6 shows the highest return of 9.83% in the FY 2009/10 and negative return of -0.958, in the FY 2010/11.

4.2.4 Sagarmatha Insurance Company 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 112.312 million. 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 4.7.

Table 4.7

Five Year MPS and DPS of Sagarmatha Insurance Company

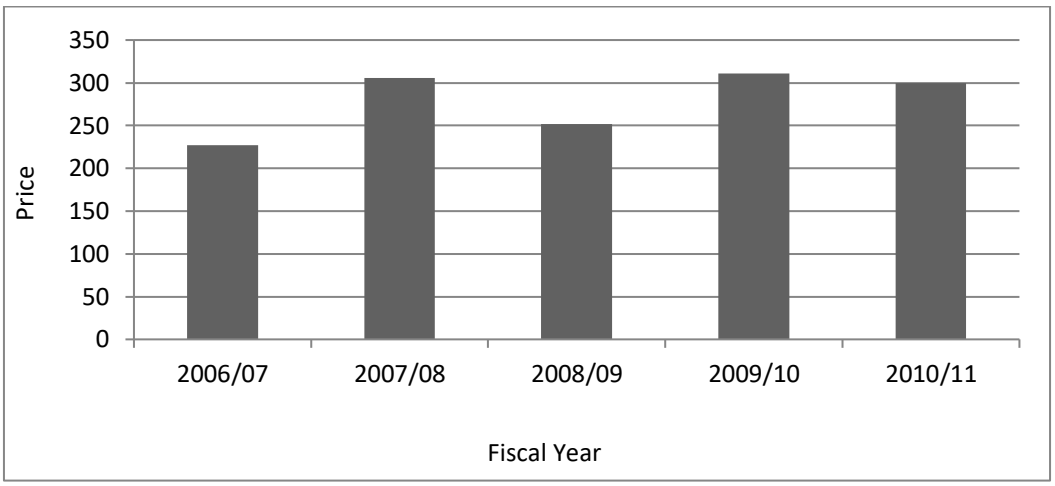
Fiscal Year	High MPS	Low MPS	Closing MPS	DPS	Stock Dividend	Total Dividend
2006/07	227	210	227	0	1:0.25	76.5
2007/08	315	287	306	10.68	0	10.68
2008/09	295	250	252	10.53	0	10.53
2009/10	327	298	311	0	1:0.10	29.8
2010/11	337	295	300	0	0	0

Source: Nepse

Figure 4.7

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 2006/07 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 2006/07 and highest market price is in the fiscal year 2007/08 the company has distributed stock dividend of 1:0.25 ,1:0.333 and 1:0.10 per share in the FY 2006/07 fiscal year 2007/08 and fiscal year 2009/10 respectively which causes slightly fall in market price stock the company has also distributed cash dividend of Rs 1.68 and 10.53 in the fiscal year 2007/08 and 2008/09 respectively.

Table 4.8

Expected Return Standard Deviation and Coefficient of

Variation of Sagarmatha Insurance Company

Fiscal Year	Closing MPS	Dividend per share	$\frac{R\%(P_t - P_{t-1}) + P_1}{P_{t-1}} \times 100$	R-$\bar{R}$	(R-$\bar{R}$)^2
2006/07	227	76.5			
2007/08	306	10.68	39.50	25.24	637.05
2008/09	252	10.53	-14.20	-28.46	809.97
2009/10	311	29.8	35.23	20.97	439.74
2010/11	300		-3.5	-17.76	315.42
Total			57.03		2202.18

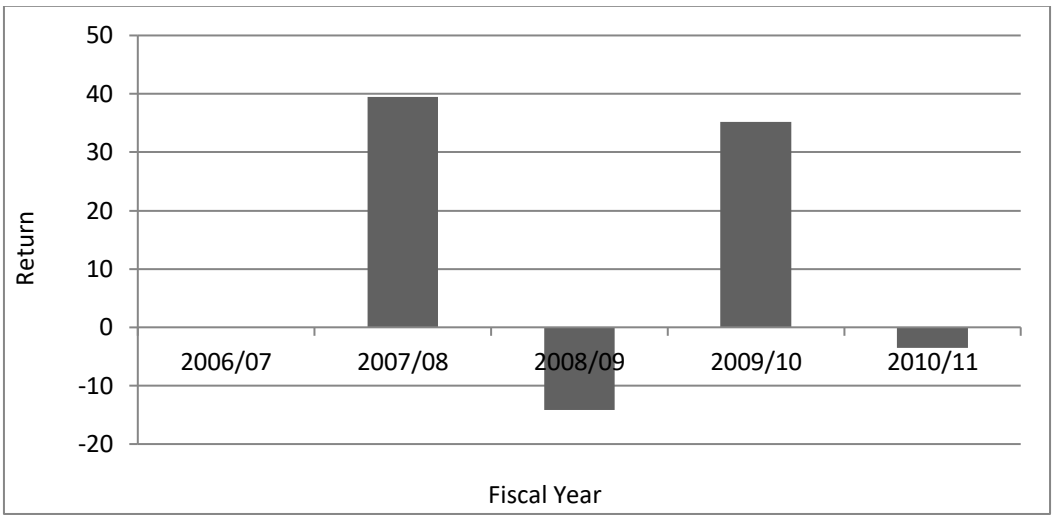
Expected Return = $\sum(R_j) = \frac{\sum R}{n} = \frac{57.03}{4}$ =14.26

Standard Deviation= $\frac{\sum(\mathbf{R}-\bar{R})\mathbf{2}}{n-1} = \sqrt{\frac{2202.18}{3}}$ =$\sqrt{734.06}$=27.09

Coefficient of Variation $(\mathrm{CV}) = \frac{\sigma}{\bar{R}} = \frac{27.09}{14.26}$ =1.89

Figure 4.8

Annual Rate of Return



In the table 4.4 mean return of SIC is 14.36 which is lowest as compared to market return 18/.83. The standard deviation is 27.09 and coefficient of variation is 1.89. The figure 4.8 shows the highest return of 39.50% in fiscal year 2006/07 and negative return of -14.20 in the fiscal year 2008/09 and -3.5 in the fiscal year 2010 /11.

4.2.5 Analysis of Market Risk and Return

In Nepal there is only one stock market called Nepal Stock Exchange Ltd. (NEPSE) the overall market movement is represented by market index (i.e. NEPSE index). The NEPSE index has been changing based on the market portfolio return. Its standard deviation and coefficient of variations is presented below in table 4.9.

Table 4.9

Market Risk and Return

Fiscal Year	NEPSE Index	$R_m = \frac{(NI_1 - NI_0)}{NI_0}$	$R_m - \overline{R_m}$	$(R_m - \overline{R_m})^2$
2005/06	286.67			
2006/07	386.83	0.3494	0.1611	0.0260
2007/08	683.95	0.7681	0.5798	0.3362
2008/09	963.36	0.4085	0.2202	0.0485
2009/10	749.10	-0.2224	-0.4107	0.1687
2010/11	477.73	-0.3623	-0.5506	0.3032
Total		0.9413		0.8826
Mean	0.1883			
S.D.	0.4698			
C.V.	2.4950			

Expected Return $\overline{R} = \frac{\sum R}{n} = \frac{0.9413}{5} = 0.1883$

Standard Deviation $\sigma = \sqrt{\frac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\frac{0.8826}{4}} = \sqrt{0.2207} = 0.4698$

Coefficient of Variation C.V. $= \frac{\sigma}{\overline{R}} = \frac{0.4698}{0.1883} = 2.4950$

The trend Line and the bar diagram of the market return of sample years is given below.

Figure 4.9

Market Risk and Return

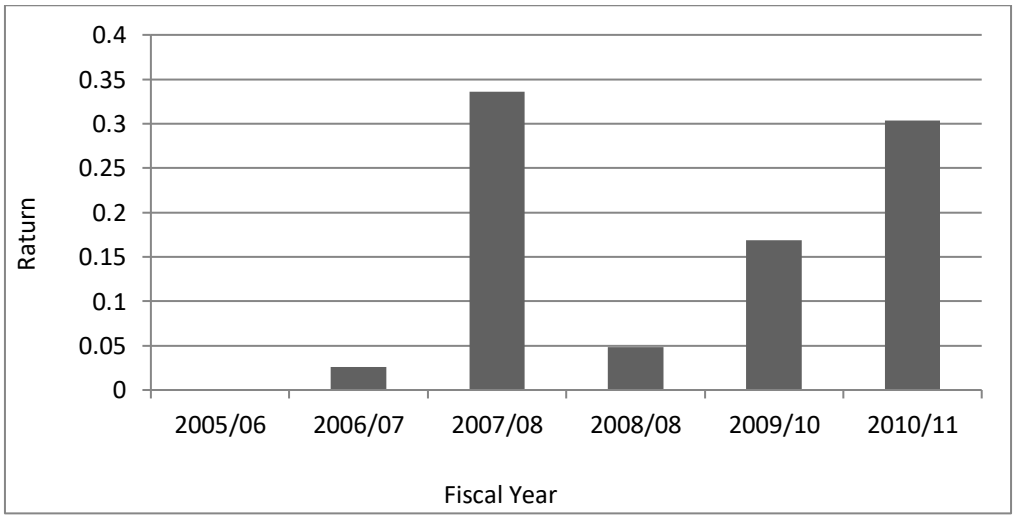
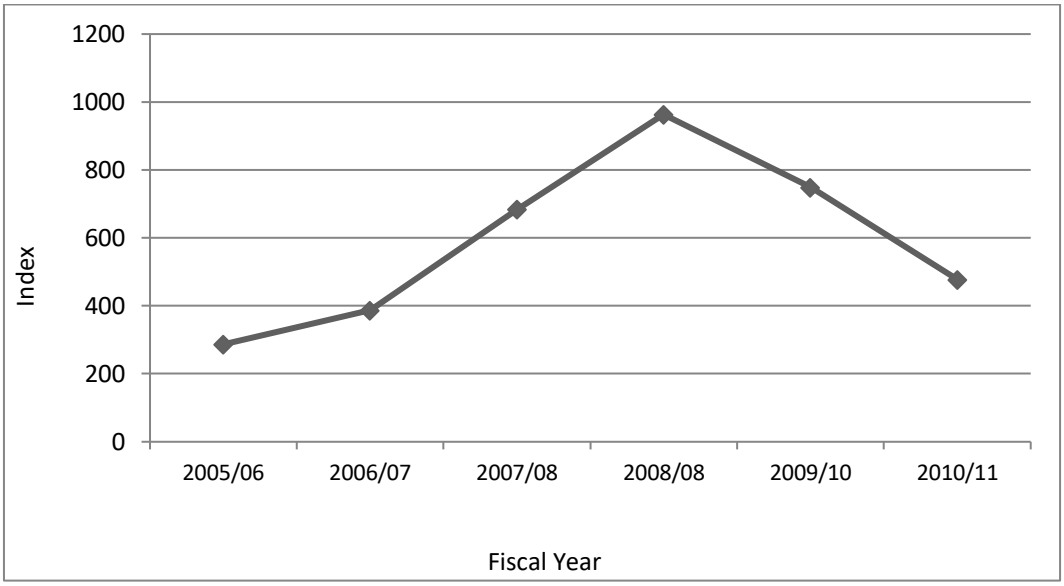


Figure 4.10

Trend Line Showing NEPSE Index



Market return is calculated on the basis of NEPSE index for each year. The table 4.9, and figure 4.9 shows that the NEPSE index is in increasing trend in the year 2008/2009 and is in decreasing trend thereafter. It ranges between 286.67 to 963.36. It is maximum in the year 2008/2009 and minimum in the year 2005/2006. The average return of market is 18.83%, standard deviation of the market is 46.98% and the coefficient of variation is 2.4950.

Table 4.10

Calculation of Beta Coefficient of the Common Stock of PIC

Fiscal Year	R_j	$R - \overline{R_j}$	R_m	$(R_m - \bar{R}m)$	$(R_J - \bar{R}_j)\ (R_m - \bar{R}m)$
2005/06	-	-	-	-	-
2006/07	0.3289	0.1734	0.3494	0.1611	0.0279
2007/08	-0.9576	0.8021	0.7681	0.5798	0.4651
2008/09	-0.3315	-0.487	0.4085	0.2202	-0.1072
2009/10	-0.1526	-0.3081	-0.2224	-0.4107	0.1265
2010/11	-0.0248	-0.1803	-0.3623	0.5506	-0.0993
	$\sum R_j$ =0.7776		$\sum R_m$ = 0.9413		0.4132
	$\overline{R_j}$ = 0.1555		$\overline{R_m}$ =0.1883		

Where,

R_j = Realized Return of PIC

$\overline{R_j}$ = Expected Return of PIC

R_m = Realized Return of Market

$\overline{R_m}$ = Expected Return of Market

Now,

$$\text{Cov}\left(R_j, R_m\right) = \frac{\sum(R_j - \overline{R_j})(R_m - \overline{R_m})}{n-1} = \frac{0.4132}{5-1} = 0.1033$$

Again,

$$B_j = \frac{Cov\,(R_j R_m)}{\sigma^2 m} = \frac{0.1033}{0.2207} = 0.4681$$

Table 4.11

Calculation of Beta Coefficient of the Common Stock of HGIC

Fiscal Year	R_j	$R - \overline{R_j}$	R_m	$(R_m - \bar{R}m)$	$(R_J - \bar{R}_j)$ $(R_m - \bar{R}m)$
2005/06	-	-	-	-	-
2006/07	0.6179	0.3461	0.3494	0.1611	0.0557
2007/08	1.21	0.9382	0.7681	0.5798	0.5440
2008/09	-0.1449	-0.4167	0.4085	0.2202	-0.0918
2009/10	-0.1789	-0.4507	-0.2224	-0.4107	0.1851
2010/11	-0.1452	-0.417	-0.3623	0.5506	-0.2296
	$\sum R_j$ =1.3589		$\sum R_m$ = 0.9413		0.4634
	$\overline{R_j}$ = 0.2718		$\overline{R_m}$ =0.1883		

Where,

R_j = Realized Return of HGIC

$\overline{R_j}$ = Expected Return of HGIC

R_m = Realized Return of Market

$\overline{R_m}$ = Expected Return of Market

Now,

$$\text{Cov}\left(R_j, R_m\right) = \frac{\sum(R_j - \overline{R_j})(R_m - \overline{R_m})}{n-1} = \frac{0.4634}{5-1} = 0.1159$$

Again,

$$B_j = \frac{Cov\,(R_j R_m)}{\sigma^2 m} = \frac{0.1159}{0.2207} = 0.5251$$

Table 4.12

Calculation of Beta Coefficient of the Common Stock of EIC

Fiscal Year	R_j	$R - \overline{R_j}$	R_m	$(R_m - \bar{R}m)$	$(R_J - \bar{R}_j)$ $(R_m - \bar{R}m)$
2005/06	-	-	-	-	-
2006/07	0.02766	-0.0051	0.3494	0.1611	-0.0008
2007/08	0.00345	-0.0293	0.7681	0.5798	-0.0170
2008/09	0.0481	0.0154	0.4085	0.2202	0.0034
2009/10	0.0924	0.0597	-0.2224	-0.4107	-0.0245
2010/11	0.00958	-0.0423	-0.3623	0.5506	-0.0232
	$\sum R_j$ =0.16363		$\sum R_m$ = 0.9413		-0.0621
	$\overline{R_j}$ = 0.032726		$\overline{R_m}$ =0.1883		

Where,

R_j = Realized Return of EIC

$\overline{R_j}$ = Expected Return of EIC

R_m = Realized Return of Market

$\overline{R_m}$ = Expected Return of Market

Now,

$$\text{Cov}\left(R_j, R_m\right) = \frac{\sum(R_j - \overline{R_j})(R_m - \overline{R_m})}{n-1} = \frac{-0.0621}{5-1} = -0.0155$$

Again,

$$\beta_j = \frac{Cov\,(R_j R_m)}{\sigma^2 m} = \frac{-0.0155}{0.2207} = -0.070$$

Table 4.13

Calculation of Beta Coefficient of the Common Stock of SIC

Fiscal Year	R_j	$R - \overline{R_j}$	R_m	R_m-$\overline{R_m}$	R_s-$\overline{R_s}$
2005/06	-	-	-	-	-
2006/07	0.4452	0.2421	0.3494	0.1611	0.0390
2007/08	0.3950	0.1919	0.7681	0.5798	0.1113
2008/09	-0.1420	-0.3451	0.4085	0.2202	-0.0760
2009/10	0.3523	0.1492	-0.2224	-0.4107	-0.0613
2010/11	-0.035	-0.2381	-0.3623	-0.5506	0.1311
	$\sum R_j$ =1.0155		$\sum R_m$ = 0.9413		0.1441
	$\overline{R_j}$ = 0.2031		$\overline{R_m}$ =0.1883		

Where,

R_j = Realized Return of SIC

$\overline{R_j}$ = Expected Return of SIC

R_m = Realized Return of Market

$\overline{R_m}$ = Expected Return of Market

Now,

$$\text{Cov}\left(R_j, R_m\right) = \frac{\sum(R_j - \overline{R_j})(R_m - \overline{R_m})}{n-1} = \frac{0.1441}{5-1} = 0.0360$$

Again,

$$\beta_j = \frac{Cov\,(R_j R_m)}{\sigma^2 m} = \frac{0.0360}{0.2207} = 0.1631$$

The calculation of beta coefficient in the common stock of selected insurance companies has shown in below:

Table 4.14

Beta Coefficient of Selected Four Insurance Companies

S.N.	Companies	Beta Coefficient
1	PIC	0.4681
2	HGIC	0.5251
3	EIC	-0.070
4	SIC	0.1631

In the above table the highest Beta Coefficient has HGIC and Lowest Beta Coefficient has EIC.

Table 4.15

Required Rate of Return, Expected Return and Price

Evaluation of 4 Selected Insurance Companies

S.N.	Companies	B_j (Beta)	Risk Return (R_f)	Required Rate of Return	Exp. Return	Price Situation
1	PIC	0.4681	7.85	0.1299	0.1122	Overpriced
2	HGIC	0.5251	7.85	0.1362	0.1853	Under Priced
3	EIC	-0.070	7.85	0.0708	0.0351	Overpriced
4	SIC	0.1631	7.85	0.0964	0.1426	Under Priced

Where,

Required Rate of Return = $ER_j = R_f + \left(R_m - R_f\right) B_j$

Risk Free Return = 0.0785 (Source; NRB, Treasury Bill)

Expected Market Return = 0.1883

Now, Calculation of Required Rate of Return of Four Insurance Companies.

1. Required Rate of Return of PIC

$\overline{R}_j = R_f + \left(R_m - R_f\right) B_j$

= 0.0785+(0.1883-0.0785)0.4681

= 0.1299

2. Required Rate of Return of HGIC

$\overline{R}_j = R_f + \left(R_m - R_f\right) B_j$

= 0.0785+(0.1883 - 0.0785) 0.5251

= 0.1362

3. Required Rate of Return of EIC

$\overline{R}_j = R_f + \left(R_m - R_f\right) B_j$

= 0.0785+(0.1883 - 0.0785) 0.070

= 0.07081

4. Required Rate of Return of SIC

$\overline{R}_j = R_f + \left(R_m - R_f\right) B_j$

= 0.0785+(0.1883 - 0.0785) 0.1631

= 0.0964

Note: Rf is assumed to the weighted average interest rate of Government Treasury Bill (364 day) determined by NRB.

The above table show that the expected return and required rate of return of four selected sample Insurance Companies. It describes the price situation of the common stock of these companies where they are under priced or over priced by using capital assets pricing model (CAPM). If required rate of return (RRR) is greater than expected rate of return (ERR). Stock is said to be over priced and vice versa. In over priced the investors follow selling strategy and in under priced the investors follow buying strategy.

From the above table we can say that common stock of PIC and EIC overpriced and HGIC and SIC underpriced.

Table 4.16

Calculation of Weighted Beta of Insurance Companies

S.N.	Companies	B_j (Beta)	Market Capitalization	Weight (W_j)	$W_j B_j$
1	PIC	0.4681	15,70,80,000	0.1605	0.0751
2	HGIC	0.5251	20,16,00,000	0.2060	0.1082
3	EIC	-0.070	31,38,80,000	0.3207	-0.0224
4	SIC	0.1631	30,63,10,000	0.3129	0.0510
	Total		97,88,77,000		0.2119

Hence, the weighted average beta of the share B_j is 0.2119, which is the Beta Coefficient of the Selected Insurance Companies.

Table 4.17

Calculation of Estimated Population S.D. of Beta

S.N.	Companies	B_j (Beta)	$B_j - \overline{B_j}$	$\left(B_j - \overline{B_j}\right)^2$
1	PIC	0.4681	0.1965	0.0386
2	HGIC	0.5251	0.2535	0.0643
3	EIC	-0.070	-0.3416	0.1167
4	SIC	0.1631	-0.1085	0.0118
	Total	$\overline{B}_j = \frac{1.0863}{4} = 0.2716$		0.2316

Here, $\overline{B}_j = \frac{\sum B_j}{4} = \frac{1.0863}{4} = 0.2716$

Variance of Beta $\sigma B^2 = \frac{\sum\left(B_j - \overline{B}_j\right)}{n-1} = \frac{0.2316}{3} = 0.0772$

Estimated Variance of Population $\sigma B^2 = \frac{4}{4-1} x 0.0772 = 0.1029$

4.3 Analysis of Risk Diversification

The analysis is based on two assets portfolio and the tools for analysis are already presented in the research methodology. Here the portfolio of the common stock of Premier Insurance Companies (PIC) and Himalayan General Insurance Company (HGIC) is made.

Table 4.18 shows the calculation at covariance of the returns of the given two stocks Cov ($R_A R_B$) and the proportion at stock W_A that minimize the risk, standard deviation.

$$W_A = \frac{\sigma B^2 - Cov\left(R_A R_B\right)}{\sigma A^2 + \sigma B^2 - 2Cov\left(R_A R_B\right)}$$

Where,

σA^2 = Standard Deviation of stock PIC

σB^2 = Standard Deviation of stock HGIC

$Cov\left(R_A R_B\right)$ = Equivalent representations for covariance of returns between stock PIC and HGIC.

W_A = Proportion of Stock PIC

W_B = Proportion of Stock HGIC

4.4 Analysis of Risk and Return of Common Stock

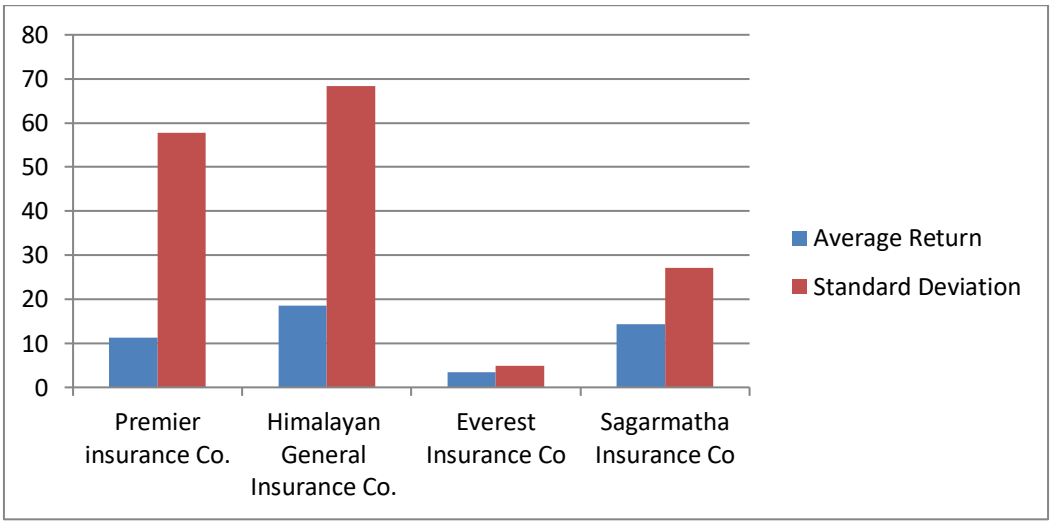
Table 4.18

Average Rate of Return Standard Deviation and Coefficient Variance of Insurance Companies

Insurance Companies	Average Return	Standard Deviation	Coefficient Variance
Premier insurance Co.	11.22	57.74	5.15
Himalayan General Insurance Co.	18.53	68.33	3.69
Everest Insurance Co	3.51	4.88	1.39
Sagarmatha Insurance Co	14.36	27.09	1.89

Figure 4.11

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 2006 to mid July 2011 the average return of PIC was 11.2% with standard deviation of return 57.74% the coefficient of variance obtained by dividing standard deviation by average return was 5.15.

Similarly the average return of HGIC was 18.53% with standard deviation of return 68.33%. The coefficient of variance obtained by dividing standard deviation by average return was 3.69.

Likewise, the average return of EIC was 3.51% with standard deviation 4.88% and the coefficient of variance obtained by dividing standard deviation by average return was 1.39.

The average return of sic was 14.36 with standard deviation of return 27.09% and the coefficient of variance was 1.89.

On the basis of the above calculation we can analyze that the return of Himalayan General Insurance Company and Sagarmatha Insurance Company are high with lower coefficient .Likewise the return of Everest insurance company is low but lower C.V and return of Premier Insurance Company is optimum with optimum level of risk of the common stock.

Table 4.19

Market Capitalization of 4 Insurance Companies at Fiscal Year 2010/011

Name of Company	**Market Capitalization**	**Percentage**
Premier Insurance Co.	157080000	16.07
Himalayan General Insurance Co.	201600000	20.59
Everest Insurance Co.	313880000	32.06
Sagarmatha Insurance Co.	306310000	31.29
Total	**978870000**	

Source: NEPSE

Figure 4.12

Market Capitalization

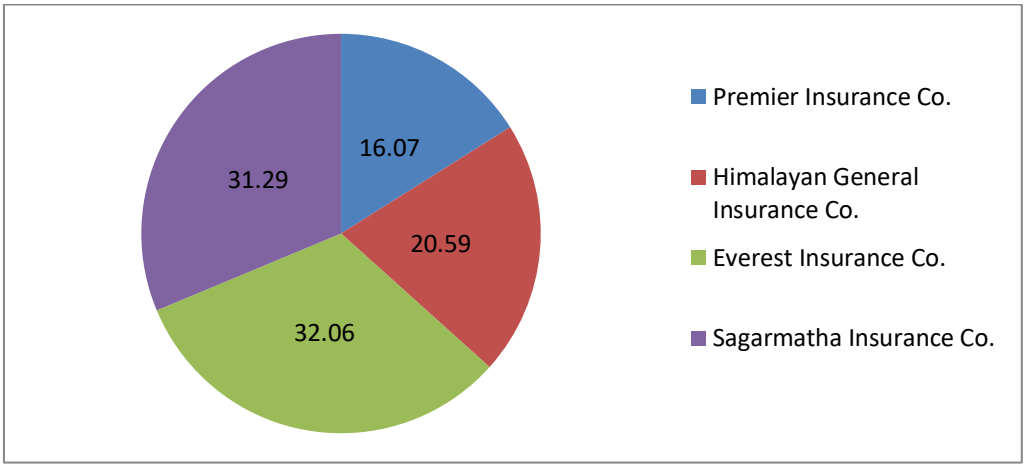


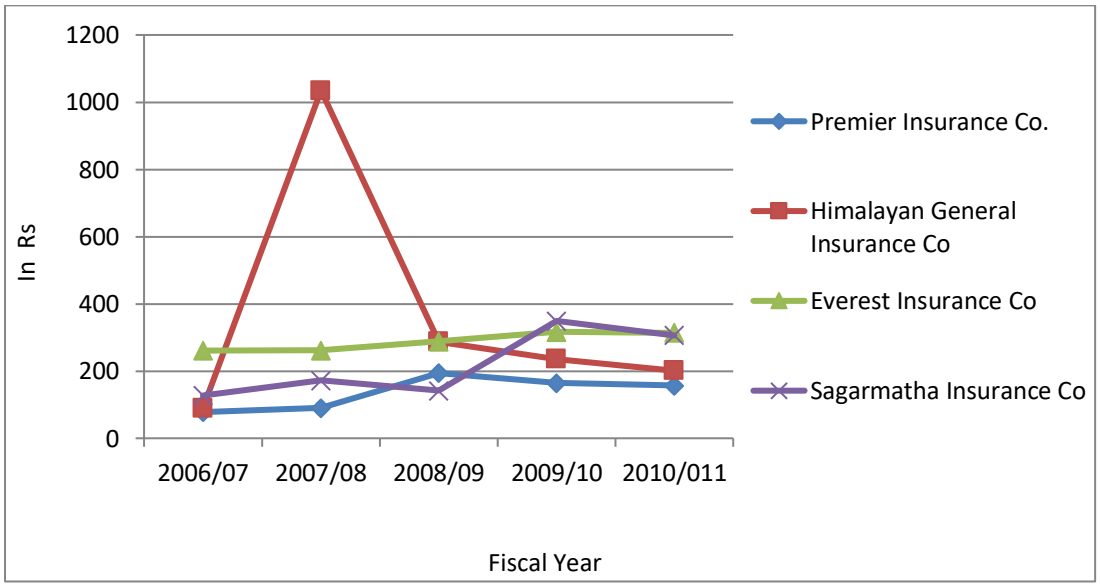
Table 4.23

Market Capitalization of Four Insurance Company

Fiscal Year	Premier Insurance Co.	Himalayan General Insurance Co	Everest Insurance Co	Sagarmatha Insurance Co
2006/07	78	90	261	127.35
2007/08	90	1035	261.90	171.66
2008/09	193.80	287.28	288.56	141.32
2009/10	164.22	235.87	316.91	349.29
2010/011	157.08	201.6	313.88	306.31

Figure 4.13

Representation of Different Year Market Capitalization of Companies



The trend of market capitalization of premier insurance company was in increasing order from the fiscal year 2006/07 to 2008/09 and it was noted highest in the fiscal year 2008/09 and lowest 2006/07.

Likewise the trend of market capitalization of Himalayan General Insurance Company was in increasing order from fiscal year 2006/07 similar to that of Premier Insurance Company and it was noted highest in the fiscal year 2008/09 and lowest in the fiscal year 2007/08.

The market capitalization trend of insurance company for better than other as its capitalization is increasing order till the fiscal year 2009/010 wit highest capitalization and lowest capitalization is in the fiscal year 2006/07.

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

Insurance Companies Representing Systematic and Unsystematic Risk

Table 4.20

Insurance Companies Representing Systematic and Unsystematic Risk

Insurance Companies	Total Risk (σ_{j^2})	Systematic Risk	Unsystematic Risk
PIC	3333.91	483.62	2850.29
HGIC	4668.99	608.57	4060.42
EIC	23.81	-10.81	34.62
SIC	733.87	58.71	675.16

4.5 Major Finding of Study

- The mean return of stock of premier insurance company was found to be 11.22% standard deviation of 57.74 and CV of 5015. The mean return Himalayan general insurance company was found to be 18.53%. Standard deviation of 68.33 and CV of 3.69. The mean return of EIC was 3.51% with standard deviation and CV of 4.88 and 1.39 respectively .Finally the mean return of Sagarmatha insurance company was found to be 14.36% standard deviation of 27.09 and CV of 1.89%.

- The Return of Himalayan general insurance company and Sagarmatha insurance company are high with lower coefficient of Variance. The return of lower CV and the return of premier insurance company is optimum with optimum level of risk of the common stock.
- Market capitalization trend for five year has been observe for different insurance company and finally concluded that the end of fiscal year 20101/011 Everest insurance company have highest capitalization of RS. 313880000 and premier insurance company ltd with have lowest capitalization of RS. 157080000.
- THE average rate of return give by NEPSE index was 18.83% with standard deviation on and CV 46.98% and 2.50 respectively.

The beta measure the systematic risk and define by market explains the sensitivity of stock with market is used for ranking the systematic risk of various asset. The beta coefficient of selected insurance companies is given in above table respectively. Since the beat coefficient of all the companies is less than 1 with indicates the share is less risky or volatile than market.

- In case of hypothesis testing calculated value is less than the tabulated value so the null hypothesis accepted i.e, there is no significant difference between the portfolio return of common stock of insurance companies and market portfolio.
- Comparison between RRR and err helps us to identify whether the stock is under priced or overpriced among the selected companies stock of the PIC and EIC are overpriced. So it is better to sell and HGIC and sic are under priced so, it is better to purchase.
- The portfolio analysis indicates that forming portfolio can reduce the risk .We have constructed portfolio between PIC and HGIC ,PIC and EIC,PIC and sic that found their correlation coefficient is positively correlated so much portfolio is not beneficial for investment but PIC and EIC are negatively correlated , so it is beneficial for investment.

CHAPTER - V

SUMMARY CONCLUSION AND RECOMMENDATION

5.1 Summary

More than more people want to know that their invest risk and return. My study is related with this topic risk and return on common stock of the selected insurance companies. Risk and return is an important tool in financial management. Financial ratio have been used for centuries as a rate of thumb to aid in understanding tradeoff between risk and return but they only starch the surface. Development in the field of finance has led to the application of many new concepts and model to deal with various issues related to corporate financial management.

All investors would want their investment to yield favorable return. No investor will like to invest in risky assets unless he is assured of adequate compensation for the acceptance of risk. Hence, risk plays a central role in the analysis of investment. So, they want relationship between risk and return premium. Finance mostly deal on the monetary risk and return, which is the most affecting matter for an individual to a large corporation.

The main objective of the study is to analyze the risk and return of common stock in Nepalese context that why the study is focused on the common stock listed insurance companies of Nepal. The study has taken a sample of listed four insurance companies as reference to analyze the risk and return, brief reviews of related studies has been performed. Table, graph and diagrams are used to present the result of the analysis.

For the study of data used primary and secondary data and its collection from the Nepal stock exchange NRB, SEBON, Beema Samiti and financial records of studied companies.

5.2 Conclusion

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 EIC is low because of fall in the market price of 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 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 trends to be low riskier than the market.

The relationship between return of insurance company common stock 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 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 HGIC and PIC provides return of 13.71 % at portfolio risk of 56.91%. The correlation between PIC and HGIC is perfectly positive i.e. 0.7280.

5.3 Recommendation

That are following things that can be recommended from the investment .the insurance company should not focus on profit maximizing but also the overall wealth maximization of the shareholder since share price depends on a number of financial decisions as well as market and economic environment But largely , it is function of firms 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 investor that while making and investment decision the investor should consider the companies market price per share 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 holds for sometimes and sell it when price rises to earn expected return. Again those investor 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 premier insurance company and Himalayan 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 modernizing with modern technology so that more and mere investors can trade easily through the modern technology. Future effective and efficient information channel should develop to floe the trading information to the NEPSE listed companies.

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

Finally for the overall development of stock market which is very essential in the context of Nepal for the overall economy of the country. So all the concerned persons, investors respective companies their staff. Government policy maker etc shows put effort their parts in order to lead the country towards the prosperity.

Our study area risk and return analysis is less studied are in the context of our country so it is strongly suggested that it I better and beneficial to conduct future study on this topic with maximum number of examples.

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ANNEXURE

Annex 1
Correlation, Covariance and Weighted of Stock A and B (PIC and HGIC)

Fiscal Year	$(R_A - \overline{R}_A)$	$(R_B - \overline{R}_B)$	$(R_A - \overline{R}_A)(R_B - \overline{R}_B)$
2007/08	0.8454	1.0247	0.8663
2008/09	-0.4437	0.3302	-0.1465
2009/10	-0.2648	-0.3642	0.0964
2010/11	0.137	-0.3305	0.0453
Total			0.8615

Where,

$(R_A - \overline{R}_A)$

$(R_B - \overline{R}_B)$

$$Cov(R_A - \overline{R}_A) = \frac{\sum\left(R_A - \overline{R}_A\right)\left(R_B - \overline{R}_B\right)}{n-1} = \frac{0.8615}{4-1} = 0.2872$$

$$V_{AB} = \frac{Cov\left(R_A R_B\right)}{\sigma_A \sigma_B} = \frac{0.2872}{0.5774 x 0.6833} = 0.7280$$

Here, Correlation is perfectly positive, so Portfolio cannot reduce to any level of Risk.

$$W_A = \frac{\sigma B^2 - Cov\left(R_A R_B\right)}{\sigma A^2 \sigma B^2 - 2Cov(R_A R_B)}$$

$$= \frac{0.4669 - 0.2872}{0.3334 + 0.4669 - 2x0.2872} = \frac{0.1797}{0.8003 - 0.5744} = \frac{0.1797}{0.2259} = 0.7955$$

$$W_B = 1 - 0.7955 = 0.2045$$

As above calculation, Investors should Diversify their fund 79.55% for stock A.

Again, Calculation of Portfolio Return:

$$R_p = W_A \overline{R}_A + W_B \overline{R}_B$$

0.7955 x0.1122+0.2045x0.1853

= 0.1271

= 12.71%

Where,

R_P = Average Return on Portfolio of Stock A & B

$\overline{R_A}$ = Average Return of PIC

$\overline{R_B}$ = Average Return of HGIC

And the Portfolio Risk:

$$\sigma_P = \sqrt{W_A{}^2\sigma_A^2 + W_B{}^2\sigma_B^2 + 2W_A W_B CovAB}$$

$$= \sqrt{(0.7955)^2 (0.5774)^2 + (0.2045)^2 (0.6833)^2 + 2x0.7955x0.2045x0.2872}$$

$$\sqrt{0.3239} = 0.5691 = 56.91\%$$

By using diversification, we can eliminate risk before diversification, standard deviation of PIC and HGIC 0.5774 and 0.6833 respectively, but their portfolio risk is 0.5691, which is lower than before diversification. Diversification can only reduce risk but it cannot increase return portfolio return is simply the average return of individual security's return.

Annex 2

Correlation, Covariance and Weighted of Stock A and B (PIC and EIC).

Fiscal Year	$(R_A - \overline{R}_A)$	$(R_B - \overline{R}_B)$	$(R_A - \overline{R}_A)(R_B - \overline{R}_B)$
2007/08	0.8454	-0.0316	-0.0267
2008/09	-0.4437	0.0313	0.0058
2009/10	-0.2648	0.0632	-0.0167
2010/11	0.137	-0.0446	0.0061
Total			-0.0315

$$Cov(R_A - \overline{R}_A) = \frac{\sum\left(R_A - \overline{R}_A\right)\left(R_B - \overline{R}_B\right)}{n-1} = \frac{-0.315}{4-1} = -0.0105$$

$$V_{AB} = \frac{Cov\left(R_A R_B\right)}{\sigma_A \sigma_B} = \frac{-0.0105}{0.5774x0.0488} = -0.3723$$

Here, Correlation is perfectly positive, so Portfolio cannot reduce to any level of Risk.

$$W_A = \frac{\sigma B^2 - Cov(R_A R_B)}{\sigma A^2 + \sigma B^2 - 2Cov(R_A R_B)}$$

$$= \frac{0.0024 - (-0.0105)}{0.3334 + 0.0024 - 2x(-0.0105)} = \frac{0.0129}{0.3357 - (-0.021)} = \frac{0.0129}{0.3567} = 0.0362$$

W_B= 1-0.362 =0.9638

As above calculation, Investors should Diversify their fund 3.62% for stock A.

Again, Calculation of Portfolio Return:

$$R_p = W_A \overline{R}_A + W_B \overline{R}_B$$

= 0.0362x0.1122+0.2638x0.0351

= 0.0379

= 3.79%

Where,

R_P = Average Return on Portfolio of Stock A & B

$\overline{R_A}$ = Average Return of PIC

$\overline{R_B}$ = Average Return of HGIC

And the Portfolio Risk :

$$\sigma_P = \sqrt{W_A{}^2\sigma_A^2 + W_B{}^2\sigma_B^2 + 2W_A W_B CovAB}$$

$$= \sqrt{(0.0362)^2 (0.5774)^2 + (0.9638)^2 (0.0488)^2 + 2x0.0362x0.9638x2x(-0.0105)}$$

$$\sqrt{0.0012} = 0.0346 = 3.46\%$$

By using diversification we can eliminate risk before diversification standard deviation of PIC and EIC 0.5774 and 0.0488 respectively, but their portfolio risk is 0.0346 which is lower than before diversification.

Annex 3

Correlation, Covariance and Weighted of Stock A and B (PIC and SIC).

Fiscal Year	$(R_A - \overline{R}_A)$	$(R_B - \overline{R}_B)$	$(R_A - \overline{R}_A)(R_B - \overline{R}_B)$
2007/08	0.8454	0.2524	0.2134
2008/09	-0.4437	-0.2846	0.1263
2009/10	-0.2648	0.2097	-0.0555
2010/11	0.137	-0.1776	0.0243
Total			0.3085

$\text{Cov}(R_A\text{-}\overline{R}_B) = \frac{\sum(R_A - \overline{R_A})(R_B - \overline{R_B}}{n-1} = \frac{0.3085}{4-1} = 0.1028$

$$V_{AB} = \frac{Cov(R_A R_B)}{\sigma_A \sigma_B} = \frac{0.1028}{0.5774x0.2709} = 0.6573$$

Here, Correlation is perfectly positive, so Portfolio cannot reduce to any level of Risk.

$W_A = \frac{\sigma B^2 - \text{Cov}(R_A R_B)}{\sigma A^2 + \sigma B^2 - 2\text{Cov}(R_A R_B)}$

$= \frac{0.0734 - 0.1028}{0.3333 + 0.0734 - 2\times 0.1028}$

$= \frac{-0.0294}{0.2011}$

$= -0.1462$

$W_B = 1-(-0.1462)$

$= 1.1462$

Again Calculation of Portfolio Return

$R_p = W_A \overline{R}_A + W_B \overline{R}_B$

$= -0.1462\times 0.1122 + 1.0462\times 0.1426$

$= 0.1470$

$= 14.70\%$

Where,

R_p = Average Return on portfolio stock A and B

$\overline{R}_A$= Average return of PIC

$\overline{R}_B$= Average Return of SIC

And the portfolio Risk

$$\sigma_P = \sqrt{W_A{}^2\sigma_A^2 + W_B{}^2\sigma_B^2 + 2W_A W_B CovAB}$$

$$=\sqrt{(-0.1462)^2(0.5774)^2 + (1.1462)^2 + (0.2709)^2 + 2(-0.1462)1.1462 \times 0.1028}$$

$=\sqrt{1.3598}$ = 1.1661

= 116.61 %

T test hypothesis -1 formation of Hypotheses

Null hypothesis (HO):- average return of common stock of selected insurance company is equal to the market return.

Alternative hypothesis (H1) : average return of common stock of selected insurance company is not equal to the market return.

Computation of test statistics = $\frac{\bar{x}-\mu}{S}$

$= \sqrt{n}$

Where

$\overline{X}$= Average return of selected four insurance companies (i.e) 11.2,18.53,3.51,14.36/4

=36.83

μ=Averge rate of return of overall market (i.e 0.1883)

N= number of standard deviation of selected insurance companies (i.e.57.74,68.33,4.88,27.09)/4)

=137.72

According to formula =$\frac{36.83-0.1883}{\frac{137.72}{\sqrt{4}}}$

=$\frac{36.6417}{\frac{137.72}{2}}$

=$\frac{36.6417}{68.86}$ = 0.5321

The tabulated value of at 5% level of significance for =3 (n-1) degree of freedom 2.3533.

Decision:- since the calculated value of t(0.5321) is less than tabulated value of t(2.776) the null hypothesis is accepted.

nnex 4

Partition of Total Risk of Premier Insurance Company

Total Risk = σ^2 of PIC =3333.91

Systematic Risk= B^2 PIC $\sigma^2 m = (0.4681)^2 \times (46.98)^2 = 483.62$

Unsystematic Risk = Total Risk-Systematic Risk

= 3333.91-483.62 =2850.29

Annex 5

Partition of Total Risk of Himalayan General Insurance Company

Total Risk = σ^2 of HGIC =4668.99

Systematic Risk= B^2 HGIC $\sigma^2 m = (0.5251)^2 \times (46.98)^2 = 608.57$

Unsystematic Risk = Total Risk-Systematic Risk

= 4668.99-608.57 =4060.42

Annex 6

Partition of Total Risk of Everest Insurance Company

Total Risk = σ^2 of EIC =23.81

Systematic Risk= B^2 EIC $\sigma^2 m = (-0.070)^2 \times (46.98)^2 = -10.81$

Unsystematic Risk = Total Risk-Systematic Risk

= 23.81-(-10.81) =34.62

Annex 7

Partition of Total Risk of Sagarmatha Insurance Company

Total Risk = σ^2 of SIC =733.87

Systematic Risk= B^2 SIC $\sigma^2 m = (0.1631)^2 \times (46.98)^2 = 58.71$

Unsystematic Risk = Total Risk-Systematic Risk

= 733.87 - 58.71 =675.16