# CHAPTER - ONE

# INTRODUCTION

## 1.1 Background of the study

The economy of nation depends on the uses of available resources in efficient way. The proper utilization of assets appreciates in wealth position of individual and country as well. To mobilize available resource, there should be proper planning, efficient management, far sighting strategy, good financial management and up-to-date information. Integrated and speedily development of the country is possible only when competitive banking and financial service reaches nook and corners of the country. To grow financial activities, it requires the banking habit of the community as well as potentially strong lending opportunities. Simply, finance company is an institution whose main function is to accept deposit and invest it. Finance company collects money from public by providing attractive sound interest and can earn profit by lending it on mainly in business organization, industrial, agricultural sectors etc. So, we can say the main task of financial company is to mobilize idle resources in productive areas by collecting it from scattered sources and generating profit. Finance company plays significant role in the economic development of country. Financial companies role as intermediaries channeling between saving and investment and fulfill the credit needs of customer as well as investment requirement of savers. It is clear the efficient and stable banking systems are crucial for any orderly economic growth. The pace development of country largely depends on the level of financial development.

Successful formulation of investment policy and its proper utilization or implementation is the prime requite for the development of financial institutions. Good investment policy has positive impact on economic development of the country and vice-versa. A healthy development of any financial institutions depends heavily upon its investment policy. A sound and viable investment policy is one of the major effective tools of the economy to attain the economic objective directed towards the acceleration of the pace of development. Financial Institution should attract to its customer by implementing best or competitive investment policy. It helps to increase the quality of banking services as well as volume of quality deposits, loans and investment. Investment management of finance company is about operating as per investment policy adopted by finance company. The best investment policy helps to minimize risk and increase efficiency of investment operations so-that the profit is maximized.

Economic development is the most important factor for development of any country. Nepal is least developed country. Capital formation and its proper utilization play a paramount role for rapid economic development. A key factor in the development of a country is the mobilization of domestic resources and their investment for productive use to various sectors. Investment portfolio is one such tool that helps for proper utilization of resources. A portfolio is usually defined as a combination of assets. It is a collection of securities. Portfolio means the lists of holding in securities owned by an investor or institution.

Portfolio theory deals with the selection of optimal portfolios i.e. portfolio provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified return. Portfolio theory has been developed for the financial assets. This making investment from the selected optimal portfolio i.e. the portfolio that provides the highest rate of return with least possible amount of risk is the real investment portfolio.

Investment portfolio is one which the income or profit of the financial institution depend upon directly. Finance companies formulate sound investment policies which help maximize quality and quantity of investment and eventually to the economic growth of a country. Finance companies must follow the rules and regulation as well as directions issued by the central bank. The loan provided by a Finance company is guided by several principles such as time, their purpose, profitability, safety etc. These fundamental principles of Finance companies investment are fully considered while making investment portfolio. Investment decision is one of the major decision functions of financial management.

Finally, Finance companies and banks are the backbone of the Nepalese economy at present. It plays a vital role in capital formulation and proper utilization of the collected fund. Mobilization of saving is most essential for the economic growth of the country. Finance companies are the mediator of mobilizing such savings. Their sound performance makes them able to mobilize such fund in a proper way.

Development of the country is directly related to the volume of investment in productive sectors.

## 1.2 History of Financial Institution in Nepal

The growth of financial institution in Nepal is not so long in comparison with other developing countries. Nepal had to wait for a long time to come to the present banking system. The development of any countries cannot be image without economic activities. The development of financial system is one of the grounds for economic development. So we should take financial institution as strong means for the economic development. The development of financial institution is interwoven with the development of a person, a society and a nation. It is impossible to fulfill the needs without financial institution whether it is inside the nation or foreign country whether it is individual development or business and whether it is the people or the government. So, to solve the problems relating to economic development, developing of banking system is necessary.

In Nepal the concept of finance institution was introduces when the first financial institution, industrial Development Center was established in 1957. Later it was converted in Nepal industrial development corporation in 1959 by special charter. The after three financial institutions are established in 1992 under the company act 1964.They are NIDC Capital Market Ltd., Nepal finance and saving co. Ltd. And National finance Co. Ltd. Subsequently various financial institutions are established. And people’s participation in security investment and stock trading is increasing unexpectedly. Even though the investor do not have enough knowledge to invest in security.

Simply, Finance Company means an institution with non – banking activities. In Nepal, non-banking sector has noticed market growth in recent years in terms of their numbers and deposit base due to the competitive and dynamic financial system.

A finance institution collects the funds in term of deposits and extends loan and advances to various sectors. The main sources of funds beside equities are saving and time deposit collection and issuance of debentures. The collected funds or sources are invested in those areas, which are generally ignored by the commercial banks.

There are various types of securities, i.e. common stock, preferred stock, treasury bills, long term government bonds, long term government bonds etc. Among them common stock is that type of security which is owned by the investor. In other word common stock holders are its ultimate owner of the company. Common stock represents commitment on the part of corporation to pay periodically whatever its board of directors seems appropriate.

The position of common stock in the view point of the priority of getting return is last then other securities. Common stockholders are owners of the firm; they often have voting right that permit them to select the firm's director and to vote on special issue.

The concept of risk and return is important for the analysis of securities. Investors nay buy and sell financial assets in order to get returns on them. The return better known as reward for investment includes both dividends and capital gains or losses that arise by the increase or decrease of the security price. Therefore, an investor can obtain two kinds of return from an investment in a share of stock. One is capital gain and next is cash flow income from cash dividend.

"Risk is defined as the variability of returns of a period. The greater the variability of the returns the riskier the investment. Risk can be defined as the chance of loss. Assets having greater chance of loss are viewed as more risky than those with lesser chances of loss. More formally, the term risk is used interchangeable with uncertainty to refer to the variability of returns associated with a given asset". (Lawrence, 2001:237)

Risk return is related with each other. It is said that high risk brings high return. Risk measures the variability of return. Generally, investor is risk averse. They are always seeking higher return for more risk as risk premium. So investor should identify the security which has low risk and high return. Nepalese investors are not good familiar in investment of different securities. They have lack of knowledge that investment on the basis of portfolio can reduce risk. Nepalese investors are not good familiar in investment of different securities. They have lack of knowledge that investment on the basis of portfolio can reduce risk. They invest their funds in different securities on the basis of expectations and assumption of individual security rather than analysis of effect of portfolio. So it is necessary to make them well with these tools along with their practical implication on investment decision and evaluation. These risk and return dimensions are obviously an important concept in investment and hence to provide to investors to motivate them to invest rationally. Major Activities Performed By Finance Companies are as follows.

**Fund based activities**

- Leasing and hire purchase
- Bill discounting
- Loan
- Floating mutual funds

**Non funds based activities**

Investment management portfolio management service for individuals and corporation, issuer management underwriting, trust receipt arranging trading market for buying and selling securities private placement of shares and debentures etc.

In practice most of the finance companies are funds based. Finance companies are also important player in “Nepal capital market” investing over 10% of their finds in shares and government bonds.

The main activity of Finance company is to approve deposit and invest same amount as loan. However it has also been investing in the following activities.

- Government securities
- Share and debenture of company
- Stock in trade.

To eliminate the risk and enjoy the return the investor should follow the systematic investment process. “The investment process describes how an investor makes decision about what securities to invest in how extensive these investment should be and when they should be made. A five step procedure making the decision forms the basis of the investment process.

The first step of the investment process is to set the investment policy. It involves determining the investor’s objectives and the amount of his or her invest able wealth. Investor’s objective should be stated in terms of both risk and return. The second step of the investment process is to perform securities (or group of securities) within the board categories of financial assets. The purpose for conducting such examination is to identify those securities that currently appear to be misplaced.

The roles of finance companies have been instrumental in the overall economic development of the country. They help to pool and utilize resources, reduce costs and risks expand and diversify opportunities increases the allocate efficiency of resources promote the productivity and economy growth. These are the main part of economy of the nation.

**Table: 1.1**

**Financial Institutions in Nepal**

| S.N | Financial Institutions | Class | Number |
|---|---|---|---|
| 1 | Commercial Bank | A | 31 |
| 2 | Development Banks | B | 87 |
| 3 | Finance Companies | C | 79 |
| 4 | Micro Finance Development | D | 21 |
| 5 | Saving & Credit cooperative | A | 16 |
| 6 | NGO Financial Intermediaries | - | 45 |

*Source: NRB 2068*

## 1.3 Profile of API Finance Company Limited

API Finance Limited, established under the law 2063 related to the bank and commercial institution, is a finance company licensed by Nepal Rastra Bank for banking transactions, As Nepal Government's open economic policy to incorporate and escalate the participation of private sectors in the nation's energy, Api Finance Limited is the first Finance Limited is the first finance Company established in Lekhnath with the attempt of entrepreneurs, industrialists, Ex- Gorkha Army, Lectures, social workers and intelligent one have experience in banking as well as the financial sectors for long time. It also has come up with a vision to collect the nationwide capitals through various economic planning and invest them on organized institutions, collective from or individual level for the promotion of nation's economic development. It has been providing reliable, fast and easy services to its customers through computerized system. Currently it has been serving through 4 branches.

## 1.4 Statement of Problem

The major problem in almost all the under developed countries is the formulation of capital and its proper utilization, this directly affects the economic development of the country. To avoid this problem and contribute to welfare of national economy, various financial institutions have established. The main role of these financial institutions is to act as the bridge between the savers and users. They collect scattered deposits and give various types of loans to maximize their wealth. Financial institutions are established to develop the economic development of the country.

After the liberalization policy of the government several joint venture banks, financial institutions are established rapidly but due to poor investment policy and lack of investment strategy, most of the financial institutions might be collapsed in future. Due to high competition between the financial institution the collected huge amount from the public and the investment in practice of the collected funds is comparatively low and also the most important factor, the lack of appropriate investment policy and strategy. There are problems of investment and proper utilization of collected funds. Strong investment policy plays a significant role in utilization of collected funds and overall development of the economy. Nepalese financial institutions have not formulated their investment policy in an organized manner. They only depend upon the direct guidelines of Nepal Rastra bank. They don't have clear view towards investment policy; furthermore the implementation of policy is not in an effective way. Financial institutions are report to be criticized by customer due to implementation of wrong investment policies. They are said to be investing in less risky and liquid sector, they keep high liquid position and flow less funds in productive sectors, so these types of examples provide less investment opportunity of the funds.

Now-a- days financial institutions do not seem to be capable to invest their funds in more profitable sector. They are found to be more interested in investing in less risky and highly liquid sectors i.e., treasury bills, development bonds and other securities. They keep high liquid position and flow lower funds to the productive sectors. This has resulted into lower profitability for the commercial banks and ignorance to the national economic growth process. This is the main reason for crisis in the financial institutions and in the whole national economy as well. Investment policy may differ in different financial institutions but there is no optimum utilization of shareholders fund to have greater return in any financial institution. Under such situation, the present study will try to analyze investment, portfolio management of Api Finance Company Limited return on various types of investment, portfolio risk and return and performance towards investment. Thus this study will deal with the following issues:

1. What is the relationship of between risk & return of the selected financial institution ?
2. How is the investment portfolio managed by the finance companies?
3. How far financial companies have been able to mobilize and utilize resources?
4. Is Api Finance Company Ltd. effectively utilizing the portfolio concept in their investment?

## 1.5 Objectives of the Study

The general objective of this research is to identify the current situation of investment portfolio of finance companies in Nepal. The main objectives are as follows:

1. To analyze the risk and return of selected financial institutions on investment using portfolio concept.
2. To analyze the investment portfolio of financial institutions.
3. To know how for financial institution have been able to mobilize & utilize their resource.
4. To analyze the API is effectively utilizing the portfolio concept in their investment directed towards objectives of maximization return.

## 1.6 Significance of the Study

At present, financial institutions are gaining wide popularity through the efficient management and professional service and playing eminent role in the economy. Regarding the economic structure of the country, finance company do not have sufficient investment opportunities. Rapidly increasing financial institutions are creating threats to the commercial banks. The main objective of Finance company is to earn more profit by the proper mobilization of funds. They provide different banking facilities to the banking customers. Finance company have pivotal role in collection of dispersed small saving and transforming them into meaningful capital investment. Success and prosperity of the finance company relies heavily upon the successful investment of collected resources to the productive sector of economy. Hence, successful formulation and effective implementation of investment policy is the primerequisite for the successful performance of finance companies and other financial institutions. Therefore, the study is aimed to analyze the existing investment portfolio of finance companies of Nepal and point out the various weaknesses or defect inherent in it and provide package of suggestions for its improvement. The result of the research will be helpful for finance companies, especially for sample finance companies to formulate strategies to face the increasing competitions. There is no doubt that the study will also have multi-dimensional importance for various areas which are mentioned below in brief.

1. Importance to policy formulators and also useful for teachers, students of the subject, particularly those in commerce, chartered accountancy and institutional finance.
2. Importance to Shareholders of the concerned institution. (API finance )
3. Importance to management body of these finance companies for the evaluation of the performance of their finance companies and in comparison to other financial Institutions.
4. Importance to government bodies and policymakers such as central banks Interested outside parties such as investors, customers (Depositors, loan takers as well as others types of clients), competitors and personnel of the banks, stockbrokers, dealers and market makers.

## 1.7 Limitation of the Study

This study is not a comprehensive study. This study is conducted for the partial fulfillment of degree of MBS. So, there are many deficiencies in this study due to various limitations. Some of the limitations are as follows.

The study has covered only one finance company i.e Api Finance Company Limited

This study is based on secondary data, the calculation and conclusion of the study fully depends on the accuracy of data available from various sources and concerned organizations.

1. The analysis period of research covers only five years i.e. the fiscal years from 2063/64 to 2067/68 B.S.

2. There are many factors that affect investment decision and valuation of the firm. However, only those factors which are related with investment portfolio analysis will is considered in this study.
3. Due to the wide range of data deficiencies, only simple techniques have been used in analysis.
4. It focuses on investment performance and doesn't cover other aspects and in this study only selected financial and statistical tools and techniques are used.

## 1.8 Organization of the Study

This research will be divided into five chapters.

**Chapter -1 - Introduction**

It introduces background of study, statement of problem, objective of the study, significance, scope of the study and limitation of the study.

**Chapter - 2 - Review of Literature**

It includes pilot studies and textual concepts with regard to conceptual framework on investment, Portfolio and funds mobilization.

**Chapter - 3 - Research Methodology**

This chapter includes research design, population & sample, sources and types of data, data processing and method of analysis.

**Chapter - 4 - Data Presentation and Analysis**

This chapter deals with the presentation and analysis of data. It analyses the data and interprets the results using different financial and statistical tools.

**Chapter - 5 - Summary, Conclusion and Recommendation**

This is the last chapter of the study. It summarizes the result of analysis and suggestive framework.

Besides these, bibliography and annexure are presented at the end of the thesis. Similarly acknowledgements, table of contents, list of tables, list of figures, abbreviations are included in the front part of the thesis report.

# CHAPTER - TWO

# REVIEW OF LITERATURE

This chapter focuses on the review of literature, research studies and other pertinent prepositions in the related field study, textbooks and reference books relevant to the investment portfolio analysis of API Finance particularly different journals, Article, Annual reports and some research paper related with this topic .This chapter is arranged into the following manner.

1. Conceptual Review
2. Review of Legislative provision.
3. Review of Related study:
   - Review of International Journals and Articles.
   - Review of Nepalese Journals and Articles.
   - Review of Thesis

## 2.1 Conceptual Review

Conceptual Review provides the fundamental theoretical frame work and foundation to the present study. Hence books, research paper etc. dealing with theoretical aspects of investment and portfolio analysis are taken into consideration.

### 2.1.1 Definition of Investment

Investment usually means the sacrifice of the current money for future money. The sacrifice takes place in the present and the reward comes later, if at all, and the magnitude is generally uncertain. However, Shrestha (2002) describes investment as utilization of saving for something that is expected to produce profit or benefits. Investment is employment of funds to achieve added income or growth in value. It involves the commitment of resources put off from current consumption with hope of capitalizing some benefits in future. It includes both real asset and financial asset .Real asset investment denotes the tangible assets like building, land, machinery, factory and the like. On the other hand, financial asset investment indicates papers representing an indirect claim to real asset held by someone else. .Nevertheless, real asset is less liquid than financial asset.

"Investment is any vehicle into which funds can be placed with the expectation that will preserve or increase in value and generated positive returns." (Gitman & Joehnk;1990:265)

The above definitions infer that an investment is the allocation and mobilization of funds for a certain time period to acquire some extra benefit or extra attachment with mobilized fund.

### 2.1.2 Portfolio Management

Portfolio management is basically concerned with efficient management of portfolio investment in financial assets, including shares and debentures of companies. Portfolio management assumes periodic supervision of the security in the portfolio.

Buy and hold philosophy in the present competitive society and in view of the fluctuations of the stock market is not a very prudent. There has to be rational planning of action for sound portfolio management. The management may be by professionals or by individuals themselves. Portfolio of an individual or a corporate unit is the holding of securities and investment in financial assets holding are the result of individual"s preferences and decision regarding risk and return. The process of portfolio management is closely and directly linked with the process of decision making.

The basic problem of portfolio management is to establish an investment objective or goal and then decide the best ways to reach the goal with the securities available. This has been stated as an attempt by the investor to obtain the maximum return with minimum risk.The process of portfolio management involves a logical set of steps common to any decision planning, implementation and monitoring.

"Portfolio management is the art of handling a pool of funds so that it not only preserves its original worth but also overtime appreciates in value and yields an adequate return consistent with the level of risk assumed." (Cohen, J.B., Edward D.Z. and Arthur, Z. 1977)

### 2.1.3 Investment Portfolio

A portfolio is usually defined as a combination of assets. It is a collection of securities. Portfolio means the lists of holding in securities owned by an investor or institution. A portfolio is a collection of investment securities. Example, if you hold some stocks of Nepal Investment Bank Ltd., some of Bottlers Nepal Co., some of Radisson Hotel and some of Standard Chartered Bank Ltd. Your investment portfolio consists of the stocks of these four different companies. Portfolios analysis considers the determination of future risk; and return is a weighted average of the expected return of the individual securities.

Portfolio theory deals with the selection of optimal portfolio i.e. the portfolio that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return. Portfolio theory has been developed for the financial assets. Thus making investment from the selected optimal portfolio i.e. the portfolio that provides the highest rate of return with least possible amount of risk is the real investment portfolio.

"A portfolio simply represents the practice among the investors of having their funds in more than one asset. The combination of investment assets is called a portfolio." Weston, J.F. and Brigham, E.F. (1982)

An investor who has been paying someone or actively manages his or her portfolio has every right to insist on knowing what sort of performance was obtained. Such information can be used to alter either the constraint placed on the manager, the investment objective given to the manager, to the amount of money allocated to manager. Perhaps more importantly, by evaluating performance in specified ways a client can forcefully communicate his\ her interest to the investment manager and in all likelihood, affect the way in which his or her portfolio is managed in the future. Moreover, an investment manager, by evaluating his or her own performance, can identify sources of strengths or weakness.

### 2.1.4 Investment Alternatives

There are various alternatives for investors:

| | |
|---|---|
| 1. Equity Securities | • Common Stock<br>• Preferred Stock |
| 2. Short term debt securities | • Negotiable certificates of deposit<br>• Commercial paper<br>• Banker's acceptances<br>• Treasury Bills |

| | | |
|---|---|---|
| 3.Intermediate and Long Term Debt Securities | • Government securities | ➢ Treasury Notes<br>➢ Treasury Bonds<br>➢ Saving Bonds |
| | • Agency securities | |
| | • Municipal Securities | ➢ Revenue bonds<br>➢ General obligation bonds |
| | • Corporate bonds | |
| 4. Hybrid Securities | • Convertible preferred stock<br>• Convertible bonds | |
| 5. Derivative securities | • Options<br>• Community futures<br>• Financial futures<br>• Options in futures<br>• Rights<br>• Warrants | |
| 6. Real Assets | • Precious Metal<br>• Real State<br>• Collectibles | |
| 7. International Investment | • Multinationals Corporations<br>• Foreign stocks traded on all local exchange<br>• American Depository Receipts ( ADRs | |
| 8. Other Investment<br><br>Alternatives | • Pension Funds<br>• Mutual funds<br>• Closed –end Companies | |

### 2.1.5 Investment Uncertainty (Risk)

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

1. **Interest Rate Risk**:- It is defined as the potential variability of return caused by changes in the market interest rates. In more general terms, if market interest rates rise, then investment values and market prices will fall, and vice versa. The variability of return is the result of change in interest rate. This interest rate risk affects the prices of bonds, stocks, real estate, gold, puts, calls, future contracts and other investment as well.
2. **Purchasing power Risk**:- It is the variability of return an investor suffers because of inflation. The rate of inflation is measured by using a consumer

price index (CPI). The percentage change in the CPI is a widely followed measure of the rate of inflation.

3. **Bull-Bear Market Risk:-** Bull-Bear market risk arises from the variability in market return resulting from alternating bull and bear market forces. When a security index rises fairly consistently form a low point called a trough, for a period of time, this upward trend is called a bull market. The bull market ends when the market index reaches a peak and starts a downward trend. The period during which the market declines to the next trough is called bear market.
4. **Default Risk:-** It is the portion of an investment‟s total risk that results from changes in the financial integrity of the investment. Default risk is the variability of return that investors experience as a result of changes in the creditworthiness of a firm in which they invest. Investor losses from default risk usually result from security prices falling as the financial integrity of a firm weakness. By the time an actual bankruptcy occurs, the market prices of the troubled firm‟s securities will already have declined to near zero.
5. **Liquidity Risk:-** It is that portion of an asset‟s total variability which results from price discounts given or sales commissions paid in order to sell the asset without delay. Perfectly liquid are highly marketable and suffer no liquidation costs. Liquid assets are not readily marketable – either price discounts must be given or sales commissions must be paid, or both of these costs must be incurred by the seller. Hence, the more liquid an asset is, the larger the price discounts and/or commissions which must be given up by the seller in order to affect a quick sale.
6. **Callability Risk:-** Some bonds and preferred stocks are issued with a provision that allows the issuer to call them in for repurchase. The portion of a security‟s total variability of return that derives from the possibility that the issue may be called is the callability risk. Callability risk command a risk premium that comes the form of a slightly higher average rate of return. This additional return should increase as the risk that the issue will be called increases.
7. **Convertibility Risk:-** Convertibility risk is that portion of the total variability of return from a convertible bond or a convertible preferred stock that reflects the possibility that the investment may be converted into the issuer's common stock.

8. **Political Risk:-** The portion of an asset‟s total variability of return cased by changes in the political environment that affect the asset's market value. Whether the changes that cause political risk are sought by political or by economic interests, the resulting variability of return is called political risk.
9. **Industry Risk:-** An industry may be viewed as a group of companies that compete with each other in a market of homogenous product. Industry risk is that portion of an investment‟s total variability of return caused by events that affect the products and firms that make up an industry. The stage of the industry's life cycle, international tariffs and/or quotas on the products produces by an industry, product or industry related taxes; industry wide labour union problems, environmental restrictions, raw material availability, and similar factors interact and affect all the firms in an industry simultaneously. As a result of these commonalities, the process of the securities issued by competing firms tends to rise and fall together.

### 2.1.6 Diversification and Portfolio Analysis

Investment positions are undertaken with the goal of earning the expected rate of return. Investors seek to minimize inefficient deviations from this expected rate of return. Diversification is essential for the creation of an efficient investment because it can reduce the variability of returns around the expected return.

Diversification is the one important means that control portfolio risk. Investments are made in a wide variety of assets so that exposure to the risk of any particular security is limited. By placing one's egg in many baskets, overall portfolio risk actually may be less than the risk of any component security considered in isolation.

The objective of portfolio analysis is to reduce risk. By combining securities of low risks with securities of high risks, success can be achieved by an investor in making a choice of investment outlets. Investment positions are undertaken with the goal of earning some expected rate of return.Diversification is essential to the creation of an efficient investment because it can reduce the

variability of returns around the expected return. The objective of portfolio analysis is to develop a portfolio that has the maximum return at whatever level of risk the investor deems appropriate. Francis, J.C (2003)Some different diversification techniques for reducing portfolio's risk are follows:

1. **Simple Diversification**

Simple diversification can be defined as "not putting all the eggs in one basket", or "spreading the risks". The simple diversification would be able o reduce unsystematic or diversifiable risk. It is the random selection of securities that are to be added to a portfolio. Simple diversification reduces a portfolio's total diversifiable risk to zero and only the undiversifiable risk remains.

2. **Diversification across Industries**

Some investment counselors advocate selecting securities from different industries to achieve better diversification. It is certainly better to follow this advice than to select all the securities in a portfolio from one industry. But, empirical research has shown that diversifying across industries is not much better than simply selecting securities randomly. Studies of the rates of return from securities in many industries have shown that nearly all industries are highly correlated with one another indiversifiable variability cannot be diversified away simply by selecting securities from different industries.

3. **Superfluous Diversification**

Large no. of assets spreading of the portfolio's asst is superfluous diversification. It refers to the investors spreading himself in so many investments on his portfolio. Superfluous diversification will usually result in the following portfolio management problems:

- Impossibility of good portfolio management: If the portfolio contains dozens of different assets, the portfolio's management cannot consider the status of all of them simultaneously.
- Purchase of lackluster performers: The search for numerous different assts t buys will ultimately lead to the ill-informed purchase of investment that will not yield an adequate rate of return for the risk they bear.
- High search costs: As the number of candidate securities for a portfolio increases, it will be more costly to do the necessary security analysis.

- High transactions costs: Frequent purchases of small quantities of shares will result in lager broker’s commission.

More money is spent to manage a superfluously diversified portfolio, there will most likely to be no concurrent improvement in the portfolio performance. This, superfluous diversification may lower the net return to portfolio‟s owner after the portfolio‟s management expenses are deducted.

4. **Simple Diversification across Quality Rating Categories**

Simple diversification reduces risk within categories of stocks that all have the same quality ratings. The standard deviations of portfolios of different homogenous quality rating attained different levels of risk. The highest quality portfolio randomly diversified stocks was able to achieve lower levels of risk than the simply diversified portfolios of lower quality stocks. This result reflects the fact that default risk is part of total risk. The higher quality portfolios contain assets with less default risk. Portfolio managers can reduce portfolio risk to levels lower than those attainable with simple diversification by not diversifying across lower quality assets.

5. **Markowitz Diversification**

Markowitz Diversification is the combination of assets which are less than perfectly correlated in order to reduce portfolio risk without sacrificing portfolio returns. It can sometimes reduce risk below the undiversifiable level. Markowitz diversification is more analytical than simple diversification and considers assets correlations. The lower the correlation between assets, the more that Markowitz diversification will be able to reduce the portfolio’s risk.

Markowitz diversification can lower risk below the indiversifiable level if the securities analyst can find securities whose rats of return have low enough correlations. Unfortunately, there are only a precious few securities that have low correlations. Therefore, using Markowitz diversification requires a data bank of financial statistics for many securities, a computer and some econometric analysis.

Applying Markowitz diversification to collection of potential investment assets with a computer is called Markowitz portfolio analysis. It is a scientific way to manage a portfolio, and its results are quite interesting. Since Markowitz Portfolio analysis considers both the risk and return of dozens or hundreds or thousands of different securities simultaneously, it is a more powerful method of analyzing portfolio than using intuition or selecting investments by committee.

According to the Markowitz “The portfolio theory establishes a relationship between a portfolios expected return and its level of risk as the criterion for selecting the optimum portfolio”. Thus, Markowitz suggested following two measures for evaluating the merits of a portfolio:

- The expected return from the portfolio
- Level of risk exposure associated with the portfolio

So as to find the efficient set of portfolios & select the most efficient one, the portfolio manager will need to know the expected returns and the risk of these returns for the individual’s securities.

The portfolio model developed by Markowitz is based on the following reasonable assumption:

- The expected return from an asset is the mean value of a probability distribution of future returns over some holding period.
- The risk of an individual asset of portfolio is based on the variability of returns ( i.e. standard deviation or variance)
- Investors depend solely on their estimates of return and risk in making their investment decision. This means that investors utility (indifference) curves are only a function of expected return and risk.
- Investors adhere to the dominance principle. That is, for any given level of risk, investors prefer assets with a higher expected return to assets with a lower expected return for assets with the same expected return investors prefer lower to higher risk.

According to the Markowitz, the expected return of the portfolio is the weighted average of the expected return of the individual assets in the portfolio. The weights are defined as the portion of the investor’s wealth invested in particular asset. Alongside the expected return to the portfolio manager must also consider the risk associated with the portfolio.

According to the Markowitz, the risk of the portfolio consists of the riskiness of the individual securities and the covariance between the returns of the securities among all possible combinationsof them.

### 2.1.7 Portfolio Risk and return

Each asset's expected return and risk along with the expected return and risk for other asset's and their interrelationships are important inputs in portfolio selection. In order to construct efficient portfolios, the investor must be able to quantify the portfolios expected return and risk. Cheney, J.M. & Mosses, Eward. A. (1992)

From an investor's standpoint the fact that a particular stock goes up or down is not very important. What is important is the return on his /her portfolio, and the portfolio‟s risk. Logically, then the risk and return characteristics of an investment should not be evaluated in isolation: rather, the risk and return of an individual security should be analyzed in terms of how the security affects the risk and return of the portfolio in which it is held.

1. **Portfolio Return**

The expected return of a portfolio is the weighted average of the expected returns of the individual assets in the portfolio. The weights are the proportions of the investor's wealth invested in each asset and the sum of the weight must equal to one. Cheney, J.M. & Mosses, E.A. (1992)

The expected return on portfolio depends upon the amount of funds invested in each security, given expected return on the individual securities.The portfolio expected return is defined in equation as follows:

2. **Portfolio Risk**

The calculation of a portfolio risk is not as straight forward as the calculation of a portfolio's expected return. In order to calculate the risk of a portfolio, consideration must be given not only to the risk of the individual assets in the portfolio and their relative weights but also to the extent to which the assets returns move together. We measure the risk of an individual asset by the variance of returns or its square root, the standard deviation. The degree to which the asset's return move together is measured by the covariance or correlation coefficient. By combining the measures of individual asset risk (variance or standard deviation), relative asset weights, and the co-movement asset‟s return (covariance or correlation), the risk of the portfolio can be estimated. Cheney, J.M. & Mosses, E.A. (1992) Total risk is measured by either the variance or its square root, the standard deviation of returns. The variance of returns from a portfolio made up of n assets is defined by following equation. Francis, J.C. (2003)

### 2.1.8 Diversification of Risk

Diversification is the one prominent means to control portfolio risk. Investments are made in a wide variety of assets so that exposure to the risk of any particular securities is limited. Diversification of portfolio helps minimize risk. If investors invest their fund in more securities, they can reduce risk and maximize the return. However, even with large number of stocks, investors fail to avoid risk altogether, since virtually all securities are affected by the common micro economic factors. Followings are diversification techniques for reducing a portfolio risk.

1. **Simple Diversification**

Simple diversification can be defined as "not putting all the eggs in one basket" or "spreading the risks." (Francis; 2003:228) It is the random selection of securities that are added to a portfolio. Simple diversification reduces a portfolio‟s total diversifiable risk to zero and only the non- diversifiable risk remains.

2. **Superfluous Diversification**

Under simple diversification, maximum risk reduction is achieved through inclusion of 10-15 assets in the portfolio. If we add further more assets in the portfolio, such diversification is called superfluous diversification and should be avoided. The investor finds it impossible to manage the asset on his portfolio, because the management of a large number of assets calls for knowledge of liquidity of each investment return, tax liability and thus becomes impossible without specialized knowledge. Superfluous diversification usually results in the following portfolio management problems.

- Impossibility of good portfolio management
- Purchase of lackluster performers
- High search cost
- High transaction costs

Although more money is spent to manage a superfluously diversified portfolio, there will most likely be no concurrent improvement in the portfolio performance. Thus, superfluous diversification may lower the return the net return to the portfolio owners after the portfolio management expenses are deducted.

3. **Diversification across industries**

Diversification can also be experienced by combining securities from different industries. It is certainly better to follow this advice than select all the securities in a portfolio from one industry. Nevertheless empirical research has demonstrated that diversifying across industries is worst than simply selecting securities randomly.

4. **Simple Diversification across Quality rating categories**

Diversification of portfolio is also possible across quality rating assets or securities. Different rating agencies rate different companies and their assets based on possibility of default risk. In this technique, assets are selected randomly from the homogeneous quality rating. The standard deviation of portfolio of different homogeneous quality rating attained different level of risk. The highest quality portfolio randomly diversified stocks are able to achieve lower level risk than simply diversified portfolio of lower quality stocks. It indicates default risk is a part of total risk. The higher quality portfolios contain assets with less default risk.

Thus portfolio managers can reduce portfolio risk to levels lower than those attainable with simple diversification by not diversifying across lower quality assets.

5. **Markowitz Diversification**

"Markowitz Diversification may be defined as combining assets which are less than perfectly positively correlated in order to reduce portfolio risk without sacrificing portfolio return." (Weston & Brigham; 1987:194) It can sometime reduce below the un-diversifiable level. There is a nature trade- off between risk return in the market but at any given level of expected return. Markowitz diversification can reduce risk more than simple diversification. Applying diversification to a collection of potential investment assets with a computer is Markowitz portfolio analysis. It is a scientific way to manage a portfolio and its results are quite interesting. Since, Markowitz portfolio analysis considers both the risk and return of dozen and hundreds of different securities simultaneously; it is a more powerful method of analyzing a portfolio than using intuition. It is more analytical than simple diversification and considers assets correlation or covariance in portfolio formation. It shows that lower the correlation between assets, the more that diversification will be able to reduce the portfolio risk.

### 2.1.9 Covariance, Correlation Coefficient and Portfolio Risk

"Portfolio Risk can be measured by using covariance of return securities in portfolio. Covariance is a statistical measure of the relationship between two random variables. A positive value for covariance indicates that the securities returns tend to move in the same direction and the negative value indicates that returns of two securities move in opposite side. If the value of covariance is zero, The square root of the coefficient of determination is called Correlation Coefficient (ρ). It is defined as the covariance between dependent there is little or no relationship between the returns for two securities."(Sharp, Alexander& Bailey; 2001:180).and independent variables divided by the product of their standard deviation (Weston & Copeland; 1992:372).

$$r_{AB} = \frac{COV_{AB}}{\delta_A \delta_B}$$

Where,

$r_{AB}$= Correlation Coefficient between securities A and B

$COV_{AB}$= Covariance of return between securities A and B

$\delta_A$ = Standard deviation of return for security A

$\delta_B$ = Standard deviation of return for security B

Correlation Coefficient always lies between -1 and +1. A value of -1 represents perfect negative correlation and a value of +1 represents positive correlation.( Sharp, Alexander &Bailey;2001:180). If the correlation is perfectly positive (+1), the portfolio cannot reduce any level of risk. On the contrary, if the correlation is perfectly negative (-1), the proper combination of the two securities can reduce unsystematic risk upto zero. Hence, the positive correlation between securities return is not so beneficial and vice-versa. A zero coefficient means two variables are unrelated to each other. Hence changes in one variable are independent of changes in the other. On the other hand, when securities in a portfolio are perfectly negatively correlated, all risks can be diversified away.When securities are perfectly positively correlated, diversification does not do good whatsoever. In the typical case, correlation among individual stocks is positive but less than +1, some, but not all risk can be eliminated (Weston&Brigham; 1992:127).

### 2.1.10 Market Portfolio

The market portfolio contains every asset in proportion to their market value; it is by definition, a perfectly diversified portfolio. The market portfolio is, therefore, subject only to systematic or non- diversifiable risk. The volatility of the market portfolio is due to macroeconomic factors that affect all risky assets and not to company or industry specific factors. Volatility in returns created by unsystematic risk, this can be diversified away by adding risky assets to a portfolio. A portfolio"s total risk is equal to the sum of its systematic risk and unsystematic risk. In the case of the market portfolio, there is no unsystematic or diversifiable risk, and total risk is equals systematic risk. Since it is possible to eliminate all unsystematic risk through perfect diversification, the capital markers do not reward investors for facing unsystematic risk. Cheney, J.M. & Mosses, E.A. (1992)

The market portfolio is the unanimously desirable portfolio containing all securities in exactly the proportions in which they are supplied. The return on the market portfolio is the weighted average return on all capital on assets. In reality, it is possible to obtain only estimates of the market portfolio. However, the market portfolio is a useful theoretical construct since the return of market portfolio is the return estimated by the Dow Jones Averages, Standard & Poor"s indexes, The NYSE Index and similar indexes. Francis, J.C. (2003)

## 2.2 Review of Legal Provision

### 2.2.1 Provisions relating to Investments

The following Directives have been issued with regard to investment of financial resources of a licensed institution having exercised the powers conferred by Section 79 of the Nepal Rastra Bank Act, 2002.

1. **Implementation of Investment Policy and Procedures upon Approval**

   The licensed institutions shall implement the policies and procedures regarding the investment in Government of Nepal securities, Nepal Rastra

Bank bonds, and other corporate bodies' share and debentures only upon the approval of investment policy and procedures by the Board of Directors.

**2. Provision for Investment in Government of Nepal Securities and Nepal Rastra Bank Bonds**

There shall be no restriction as to investment by the licensed institutions in the securities of Government of Nepal and Nepal Rastra Bank bonds.

**3. Provisions for Investment in Shares and Debenture of Corporate Bodies**

a. Licensed Institutions shall invest only in the shares and debentures of corporate bodies listed in the Nepal Stock Exchange after the public issues of shares. Provided that, where the investment has been made in the shares and debentures of corporate bodies which are not listed in the stock exchange, and if such listing is not completed within one year from the date of investment, a provision of equivalent to the whole amount of such investment be provided and credited to Investment Adjustment Reserve by creating such reserve fund. The outstanding amount in such Reserve shall not be utilized for any other purpose till the said shares and securities of the corporate body are listed.With respect to investment in newly opened corporate body that where such company is not listed in stock exchange within two years from the date of operation or investment being made, a provision of equivalent to the whole amount of such investment be provided and credited to Investment Adjustment Reserve.

b. While carrying out projects such as land development, land purchase and housing construction for residential purpose and sale and management of such houses and land pursuant to clause (ad) of sub-Section (2) of Section 47 of the Banks and Financial Institutions Act, 2006 by the class "B" licensed institutions and pursuant to clause (u) of sub-Section (3) of the same Section of the same Act, licensed institution shall not invest more than twenty-five percent of the core capital of immediately preceding month.

c. While investing in housing construction and land development by a licensed institution, it may invest an amount not exceeding ten percent of the core capital maintained immediately preceding month. If found to have been invested more than the limit, the core capital shall be maintained having deducted the amount equal to the exceeded investment from the core capital.

While making such investment, investment shall be made only in the building construction and land development companies that have been incorporated as public companies.

d. Licensed institutions may invest in shares and securities of any one corporate body up to 10 percent of its core capital maintained at immediately preceding trimester and not exceeding the cumulative amount of such investment in all the companies by more than 30 percent of its core capital. Similarly, while investing in shares and debentures of corporate bodies by a licensed institution, investment shall be made not exceeding 10 percent of the paid up capital of the institution in which the investment is being made and not exceeding 25 percent of the same in case of investment made in class "D" institutions. Any amount in excess of this limit, for the purpose of calculation of the capital fund, shall be deducted from the Core capital fund.

**4. Provision for Review of Investment Portfolios**

Licensed institutions shall review its investment portfolios on half-yearly basis. With respect to such review, a statement from the Internal Auditor of the licensed institution certifying that the investments are made according to the existing investment policy and according to this Directives be obtained and `shall also be approved by the management of the institution within 1 (one) month from the close of the half yearly period.

**5. Additional Arrangement Regarding Investment**

a. Licensed institutions shall not invest in any shares, securities and hybrid capital instruments issued by any other institution of "A", "B" and "C" class licensed by this Bank. Provided that, this clause is not applicable in case of share investment in class "D" institution and income of share investment with approval from this Bank.

b. The core capital maintained in the Directives relating to investment means, the core capital maintained at the immediately preceding trimester except specifically stated otherwise.

## 2.3 Review of Journal and Articles

**Shrestha (1995)** A study on *"Portfolio Behavior of commercial Banks in Nepal"* has made remarkable efforts to examine various portfolio behavior of commercial bank in Nepal such as investment portfolio, liability portfolio, assets portfolio etc. In the study, investment of commercial banks when analyzed individually, were observed in Nepalese domestic banks invest in government securities, national saving bond, debentures and company's shares. On the basis of this study the author found that the supply of bank credit was expected to depend on total deposit, lending rate, bank rate, lagged variables and the dummy variables, similarly demand of bank credit was assure to be affected by national income, lending rate, treasury bill rate and other variables. The resources of commercial banks were expected to be related with variables like total deposits, cash reserve requirement, bank rate and lending rate. The following were the findings of the study.

- The relationship of banks portfolio variables as found to be best explained by log linear equations.
- Demand of deposit for commercial banks in Nepal is positively affected by the GDP from non agriculture and the deposit rate and lending rate of interest.
- The investment of commercial banks on govt. securities has been observed to be affected by total deposit, cash reserve requirement, and treasury bills rates and lending rates.
- The investment of commercial banks in shares and securities is normal and nor found to have strategic decisions towards investment in shares and securities.
- The loan loss ratio has been found to increase with low recovery of loan.

**Sharma (1998)** the article *"Joint Venture Banks in Nepal: Co-existing or Growing Out"* it would be definitely unwise for Nepal not to let the CBs operate in the country and not to take advantage of them as additional means of resources mobilization. So far one should admit frankly no different treatment has been extended to the domestic and CBs, at least from the government side, which is commendable. If Nepal Government keeps on the stance of treating the domestic and CBs equally and if the CBs also show their alacrity to come forward to share the trials and tribulations of this poor country, both types of banks will coalesce and co-exist complementing each other and contributing to the nation's accelerated development. On the contrary, if the

CBs use their strength against trading into the number, some path of development along with domestic banks and the government, they will eventually grow out the domestic banks from the more profitable urban areas and lucrative urban sectors unless remedying by the determination of the government.

**Shrestha, (2055)** an article entitled "Portfolio Management in Commercial Bank, Theory and Practice" mentioned that the portfolio management becomes very important for both individuals as well as institutional investors; investors would like to select a best mix of investment assets subject to the following aspects.

- Higher return which is comparable with alternative opportunities available according to the risk class of investors.
- Good liquidity with adequate safety of investment.
- Certain capital gains.
- Maximum tax concession
- Flexible investment
- Economic, efficient and effective investment mix

In the view of above aspects, following strategies are adopted.

- Do not hold any single security i.e. try to have a portfolio of different securities.
- Do not put all the eggs in one basket i.e. to have diversified investment. (Making investment in different sectors)
- Choose such portfolio of securities, which ensures maximum return with minimum risk or lower of return but with added objective of wealth maximization.

However, Author has also attempted the following approaches to be adopted for designing a good portfolio and its management.

- To find out the invisible assets ( generally securities) having scope for better returns depending upon individual characteristics like age, health, need, disposition, liquidity, tax liability etc.
- To find out the risk of securities depending upon the attitude of investor towards risk.

- To develop alternative investment strategies for selecting a better portfolio that will ensure a trade-off between risk and return to attach the primary objective of wealth maximization at lowest risk.
- To identify securities for investment to refuse volatility of return and risk.

Regarding the commercial banks, they are very eager to provide such services but because of above mentioned problems, very limited opportunity are available to the banks for exercising the portfolio management. Even considering the attraction of deposits commercial banks are facing problems since investors have not developed full confidence of putting money in fixed time deposit certificated of various maturing and sizes.

The author has drawn following conclusion for smooth running and operation of banks and financial institutions.

- The survival of the banks depends upon its own financial health and various activities
- In order to develop and expand the portfolios management activated successfully the investment management methodology of a portfolio manager should reflect high standards and give their clients the benefits of global strengths, local insights and products philosophy.
- With the discipline and systematic approval with the selection of appropriate countries, financial assets and the management of various risks, the portfolio manager could enhance the opportunity for each investor (client) to earn superior returns overtimes.
- The Nepalese banks having greater network and access to national and international capital markets have to go for portfolio management activities for the increment of their fee based income as well as to enrich the client base ant to contribute in national economy.

In this context, the author has presented two types of investment analysis techniques and fundamental analysis and technical analysis to consider any securities such as equity, debentures or bond and other money and capital market instruments. The author has also pointed out the required skilled manpower research and analysis and proper manage Information system (MIS) in any type of commercial banks to get success in portfolio management and customer’s confidence.

**Thapa (2003)** published an article "*Managing a Banking Risk* "stating the subsequent issues. Banking and financial service are among the fastest growing industries in the developing world and are also emerging as cornerstone for the other developing and underdeveloped nations as well. According to him, the primary function of a bank is trade risk. Risk cannot be avoided by the bank but can only be managed. There are different types of risk. Among them interest rate risk is one of the common risk the banks facing owing to the volatility of the interest rate in the market.

Another risk banks commonly face is the trading risk or market risk. Banks have to productively manage their excess liquidity by investing in various securities in foreign currencies and in other assets like swaps, options etc.

Credit risk is another significant risk which the banks particularly in the under developed country like Nepal because our financial system is mostly dependent on banks. Hence, it is crucial that the bankers should manage such risks prudently since it not only hampers the particular banks in concern but also badly affects the growth prospects of the entire economy.Credit risks are of two types: diversifiable risk and un-diversifiable risk.

Off- bank risk, owing to the creation of contingent liabilities should be managed by a prudent analysis of bank officials materializing such contingent contacts. Similarly, technological changes are frequently faced by banks. Therefore, for the smooth operation banks should adopt technological up-gradation from time to time.

Maintaining proper liquidity is the most difficult problem as the demand of cash is uncertain. To avoid such risk, the central bank has initiated the regulation, whereby the banks need to maintain reserve in their vault and a certain specified percentage of the total deposit with the central bank.

He concludes that risk management of the banks is not only crucial for optimum trade- off between risk and probability but is also one of the deciding factors for overall business investment lending to growth of economy. Managing risk not only needs sheer professionalism at the organizational level but appropriate environments also need to develop. Some of the major environmental problems of Nepalese banking sector are under government intervention, relatively weak regulatory fame, if we consider the international standard, meager corporate governance and the biggest of all is the lack of professionalism,the only solution to mitigate the banking risk is to develop the badly needed commitment eradication of corrupt environment particularly in the disbursement of lending, and formulate prudent and conducive regulatory framework.

## 2.4 Review of Previous Thesis

**Shrestha (2008)** conducted her thesis on *" Portfolio Analysis of Common stock of Commercial Banks in Nepal"* with the general objective to find out the level of portfolio risk and return on stock of commercial bank investment. The specific objectives were;

- To find out the trend of NEPSE index,
- To analyze the risk and return of common stock of reviewed banks, and
- To find out the best portfolio from NEPSE.

The study was focused on portfolio analysis of commercial banks.She found out that;

- The expected return of HBL stock was the highest (53.68%) and that of NABIL the lowest (32.72%) among the banks under the study.
- The risk of NBBL was the highest (93%) and SCBL had the lowest risk (55.42%).
- The correlation of stock, return and market that all of the banks stocks were highly positive correlated with the market.
- The correlation values of common stock of all banks with the markets were nearly equal to+1.
- The stock price of all four listed commercial banks were higher than NEPSE average price of stock. Likewise, the stock prices of these banks were in fluctuating trend than NEPSE index.

She concluded that the investment on common stocks is risky job. It does not guarantee both return and principal, so the investors should be well acquainted with the associated risk and work out their attitude towards the riskiness of various investment strategies.

**Shrestha (2009)** performed a research work *"A Study on Investment Portfolio of Commercial Banks in Nepal"* with the general objective of identifying the current situation of investment portfolio of commercial banks in Nepal. The main objectives were

- To analyze the investment portfolio of commercial banks;
- To analyze the risk and return of the selected five commercial banks on investment using portfolio concept and
- To forecast/examine the trend of investment for providing complementary measures.

His major findings from the analysis of risk and return were;

- SCBL has more return from investment on government securities. Hence, it effectively mobilized its total deposits on them.
- EBL and SBIN mostly mobilized their depositor's fund in loan and advances.
- The return on share and debenture displayed a wide fluctuation particularly due to the volatility of share prices in the market as well as changes in dividends.
- The portfolio risk on investment in government securities is lower than that in loan and advance or share and debenture.

He concluded that the investment on government securities is quite safe. Hence, commercial banks should also mobilize depositor's fund on them.

**Pandey (2010)** has conducted a research work on*" Risk and Return Analysis of Common Stock Investment"* the primary objective of her study was to analyze the risk and return and other relevant variables that help in making decisions about the stock and investment in Insurance Companies. The secondary objectives of her study were;

- To understand and identify the problems encountered by individual investors and Insurance Companies
- To calculate risk and return of common stocks and their portfolio and
- To analyze the volatility of different stocks and their companies and other relevant variables that should be considered during deciding investments in stocks.

On the market capitalization based analysis she observed that the size of Nepal Insurance Company (NIC) is the highest one. Expected return on the common stock of National Life and General Insurance Company Ltd (NLGI) is maximum(65.39%) and that of Himalayan General Insurance Company (HGI) is the lowest with the negative value. In overall industry sector, the expected return of Finance and

Insurance is the highest. The overall market expected return is over 50%. National Life and General Insurance Company Ltd"s expected return is the highest which is ultimate the standard deviation (risk) to be the highest and Everest Insurance Company"s risk and return is the lowest one. The stock of National Life and General Insurance Company is highly sensitive with the market owing to its degree of beta coefficient .Furthermore, the stock of United Insurance Company (UIC) moves opposite with the market due to its negative coefficient. She also observed lack of significant difference between the portfolio return of Insurance companie's stock and overall market portfolio.

Hence she concluded that poor education and inadequate information source are the major constraints for developing stock market in Nepal. On comparison of the risk and return of different industries the Finance Companies and Insurance companies are the best owing to their highest expected return with higher degree of risk. However, most of trading industries have minimum return and maximum level of risk. Market sensitivity is calculated by beta coefficient, which cannot be reduced by diversification. Due to lack of specific knowledge of stock market general public invest their funds in different securities on the basis of expectation and assumption rather than proper analysis. Thus, the proper selection of portfolio approach is the suitable way to achieve success in the stock market.

**Joshi (2011)** conduct a study on "*Portfolio Analysis on Investment with special reference to Nepalese Commercial Bank*" the general objective of the study is to identify the current situation of investment portfolio of commercial banks in Nepal. The specific objectives are;

- To analyze the current situation of the portfolio management of commercial banks.
- To evaluate the financial performance of commercial bank investment strategies.
- To see the trend of investment in different portfolios.
- To analyze the way commercial bank management of risk and return on investment through portfolio concept.

Her major findings were;

- Return on the government securities is low but it has lower risk .In the similar manner, the loan and advances give more return than the government securities, but it has also higher risk than government securities.
- The total investment to total deposit ratio of SCBL is found to be the highest in comparison to the other four sample commercial banks. It absorbed a major portion of its investment on government securities.
- The analysis indicates that commercial banks invested very nominal percentage of total outside investment on share and debenture of the other companies.
- Investment on various assets, like government securities, loan and advances and share and debenture are in increasing trend.

Based on her findings she recommended the following points.

- During the study period, all selected sample banks invested a very low proportion of their total outside investment on share and debenture of the other companies. Therefore all selected sample banks are suggested to accord more priority to investment on share and debenture.
- All sample banks have ineffectively utilized portfolio management concept. The investment of these banks is strongly dominated by loan and advances. They generate inadequate return for the banks. Hence they should have a compendium of optimum portfolios of different securities.
- The sample commercial banks are inefficiently utilizing resources particularly in the productive sectors. Hence, they should identify new investment sectors through efficient investment programs in retail banking such as education loan, housing loan, automobile loan, small-medium enterprise loan, youth self-employment loan, green energy sector oriented consortium loan etc.
- The total investment fund with respect to total deposit of EBL is pretty low. Hence, it calls for identifying the new investment sectors, and efficient as well as effective investment in those sectors.
- The profitability position of NABIL is near to satisfaction. However, its investment on various assets is less stable. Hence the bank should upgrade its stability status and decrease the variability of investment.

## 2.5 Research Gap

Research gap refers to the gap between previous research and this research. Many research studies have been conducted by the different students, experts and researcher about investment portfolio. There have been fund numerous research studies on financial commercial banks and public enterprises regarding investment portfolio. Some studies are related to case study of two company and some others are comparative in nature. But the study on investment portfolio of single financial company can be hardly fund. From the review of related studies no one studies have been found as a study on investment portfolio of API Finance.

The financial and statistical tools used by most of the researchers were ratio analysis, test of hypothesis and regression analysis. This research includes different tools like risk analysis, return analysis, ratio analysis, standard deviation, correlation analysis and co-efficient of variation as specific tools. Thus the research study made on “investment portfolio of API Finance" will be an effort to analyze on detail about investment portfolio of the API finance in present situation with the help of various related financial as well as statistical tools and techniques. The study can be beneficial to all the concerned parties and people as well.

# CHAPTER - THREE

# RESEARCH METHODOLOGY

Research methodology is the way in which the data are collected for a research project. It refers to various sequential steps to be adopted by a researcher in studying a problem with a certain objective on view. It describes the method and process of getting to the solution process applied in the entire subject of the study. It is a way to systematically solve a research problem (Kothari; 1990:39).It embraces different dependent and independent variables, types of research design, research questions and hypothesis, sample, data collection activities, technique of analysis etc. Thus, research methodology is the process of arriving at the solution of the problem through planned and systematic dealing with the collection, analysis and interpretation of facts and figures.

## 2.1 Research Design

Research design is a plan, structure and strategy of investigations conceived so as to obtain answer to research questions and to control variance (Wolff; 1975:51).It is the arrangement of conditions for collection and analysis of data in a manner aiming at combining relevance to the research purpose with economy in procedure. Considering this study objectives, the analysis is based on certain research design. In order to achieve the objectives, descriptive and analytical research design has been adopted .Descriptive research design describes the general pattern of investors, business environment, problem of portfolio management etc. The analytical research design carries out the analysis of information and data. Most of the data and information of the study were related with the past phenomenon. On this background it can be considered as a historical research.

The study covers the data from the FY2063/064 to FY2067/068.It deals with the study of portfolio analysis of API finance. As the title of the study itself indicates that it is more analytical and empirical and less descriptive.

## 2.2 Sources of Data

The study is mainly based on secondary data. Data are collected from concern bank Nepal Rastra Bank, NEPSE, SEBON and various libraries .Likewise ,the micro-level data have been derived the different libraries, such as PN campus, TU central library, website of NRB,NEPSE,SEBON etc. Furthermore, several data and information were gathered from periodicals, economic journals and the other published and unpublished reports. Informal interview with the authorities of related institutions are also the other sources of data.

## 2.3 Method of Data Collection

It indicates the sources of data and how they collected. In this study data are collected through published sources. They were collected from the correspondent offices and their respective websites.

The annual reports of API finance for the period of five years are obtained from the office visit of selected company. The data regarding the profile of API finance and other related documents were collected from direct visit. Unpublished master's thesis, books, research papers, articles, journals have been collected mainly form Centre Library of Tribhuvan University, library of PN Campus and NRB Magazines and newspapers are from concerned authorities.

After collecting data, as necessarily required, they are separated and analyzed presentation and analysis of the collected data is the main theme of the research work. Collected raw data were first presented in systematic manner in tabular forms and then analyzed by applying different financial and statistical tools to achieve the research objectives. Besides these, some graph, charts and tables have been presented to analyze and interpret the finding of the study.

## 2.4 Population & Sample

The term population of data denotes for the data of each organization which is within the boundary of specific organization whereas sample data are the data of those organization which has been selected from that whole population for study. Purposive sampling method has been used while selecting this API Finance out of the total 31 commercial banks in Nepal to date. The population data for this study comprises all financial institution, which are currently operating in Nepal. The sample consists of one selected finance company. The selected sample for the analysis is API finance.

## 2.5 Data Analysis Tools

A host of analytical tools can be applied to perform investment analysis of a firm. Following the nature of the study, a set of appropriate tools, particularly financial and statistical may be used for effective and significant analysis to meet the research objectively.

### 3.5.1 Financial Tools

On the study of portfolio investment analysis financial tools are more applicable. Financial tools are particularly are used for the analysis as well as the interpretation of financial data. These tools can be engaged to procure the precise knowledge of a business, which are fruitful for analyzing the strength and weakness of the investment policies and strategies. Thus, following financial tools are used to achieve the study goal.

**A. Risk and Return on Individual Investment Assets and Investment Portfolio**

1. **Return on Government Securities:-** The return on Government Securities is obtained by dividing interest income from government by total investment on government securities expressed as;

Return on Government Securities (Rg) = $\frac{\text{Interest Income From Government Securities}}{\text{Total Investment on Government Securities}}$

2. **Return on Share and Debentures:-** The return on share and debenture considers dividend yield and capital gain yield ( change in market price). The dividend yield is merely a partial indication of the return. Hence, the return on share and debenture depends on the change in the share price (Pandey;1997:332). It is calculated as;

$$\text{Return on Share and Debenture } (R_s) = \frac{P_1 - P_0 + D_1}{P_0} \times 100$$

Where,

$P_1$= Ending Value of Share

$P_0$= Beginning Value of Share

$D_1$= Dividend per Share

3. **Return on Loan and Advances:-** This ratio displays the bank efficiency of employing its resources in various sectors like agriculture, industry and commercial sectors to earn a good return from loan and advances.The return on loan and advances is computed by dividing total interest earned from loan and advances to total amount of loan and advances. Thus,

   Return on Loan and Advances (R) = $\frac{\textit{Interest Income From Loan \& Advances}}{\textit{Total Loan \& Advances}}$

4. **Return on Portfolio:-** The return on portfolio is simply the weighted average of the expected returns of the individual assets in the portfolio. The weights are the proportions of the investor's wealth in each asset.

   Portfolio return ($R_p$) = $W_A \bar{R}_A + W_B \bar{R}_B + \ldots\ldots\ldots + W_N \bar{R}_N$

   Where,

   $R_p$ = Return on Portfolio

   $W_A$ = Weight or Proportion of Assets 'A'

   $W_B$ = Weight or Proportion of Assets 'B'

   $\bar{R}_A$ = Expected Return of Assets 'A'

   $\bar{R}_B$ = Expected Return of Assets 'B'

5. **Risk on Individual Assets:-** The riskiness of assets is dependent on the variability of rates of return. This variability of rate of return is defined as the extent of the deviation of individual rates of return from the average rate of return. Risk on individual assets is calculated as;

   Standard deviation (σ) = $\sqrt{\frac{\Sigma(R_A - \bar{R}_A)^2}{n-1}}$

   Where,

   $R_A$ = Rate of return of individual assets

   $\bar{R}_A$ = Expected Return of Assets 'A'

   σ = Standard deviation or risk

   n = no. of years

6. **Portfolio Risk:-** The portfolio risk is a function of the proportions invested in the components, the riskiness of the components and the correlation of returns on the component securities. It is measured by either variance or standard deviation.Lower the standard deviation and variance lower the riskiness and vice versa. It can be computed by using the following formula.

**For two assets case;**

$$\delta_P = \sqrt{W_A^2\delta_A^2 + W_B^2\delta_B^2 + 2COV_{AB}W_AW_B}$$

Where,

$\delta_P$ = Portfolio Risk

$W_A$ = Weight or Proportion of Assets 'A'

$W_B$ = Weight or Proportion of Assets 'B'

$\delta_A$ = Risk on Assets 'A'

$\delta_B$ = Risk on Assets 'B'

$COV_{AB}$ = Covariance between Assets 'A' and Assets 'B'

$$COV_{AB} = \frac{\Sigma[(R_A - \bar{R}_A)(R_B - \bar{R}_B)]}{n-1}$$

**For three assets case;**

$$\delta_P = \sqrt{W_A^2\delta_A^2 + W_B^2\delta_B^2 + W_C^2\delta_C^2 + 2COV_{AB}W_AW_B + 2COV_{BC}W_BW_C + 2COV_{AC}W_AW_C}$$

Where,

$\delta_P$ = Portfolio Risk

$W_A$ = Weight or Proportion of Assets 'A'

$W_B$ – Weight or Proportion of Assets 'B'

$W_C$ = Weight or Proportion of Assets 'C'

$\delta_A$ = Risk on Assets 'A'

$\delta_B$ = Risk on Assets 'B'

$\delta_C$ = Risk on Assets 'C'

$COV_{AB}$ = Covariance between Assets 'A' and Assets 'B'

$COV_{AC}$ = Covariance between Assets 'A' and Assets 'C'

$COV_{BC}$ = Covariance between Assets 'B' and Assets 'C'

**B. Financial Ratios**

A numerical or quantitative relationship between two items or variables of the financial statement is known as ratio analysis. In other words, two accounting figures expressed mathematically is termed as financial ratio. Ratio analysis is used to compare a firm's financial and status of that of other firms or to itself on time (Gitman;1988 :275).Since this study is particularly focused on portfolio analysis of commercial banks, only few ratios related to the investment of commercial banks are adapted in the study.

1. **Total Investment to Total Deposit Ratio**:- Investment is one of the major credits generated to earn income. It implies the utilization of firm's deposit on investment in government securities. This ratio is obtained by dividing total investment by total deposit as expressed below.

   Total Investment to Total Deposit Ratio = $\frac{Total\ Investment}{Total\ Deposit}$

2. **Investment on Government Securities to Total outside Investment Ratio**:- This ratio indicates the banks‟ investment on government securities among the total outside investment. It is computed by dividing investment on government securities by total outside investment.

   Investment on Government Securities to Total outside Investment Ratio

   $$= \frac{Investment\ on\ Government\ securities}{Total\ outside\ Investment}$$

3. **Investment on Share and Debenture to Total outside Investment Ratio**:- This ratio portrays the bank investment on share and debentures of the other

companies. It is computed by dividing investment on share and debentures by total outside investment.

Investment on Share and Debenture to Total Outside Investment Ratio

$$= \frac{Investment\ on\ Share\ \&\ Debenture}{Total\ outside\ Investment}$$

4. **Return (Net Profit) on Total Assets Ratio**:- This ratio measures the profitability of funds invested in the bank's assets. It is calculated by dividing net profit after tax (NPAT) by total assets, as stated below.

$$\text{Return on Total Assets} = \frac{Net\ Profit\ After\ tax}{Total\ Assets}$$

**C. Statistical Tools**

Statistical tools are used to analyzed the relationship between two or more variables and to find how these variables are related.In this study,following statistical tools are used.

1. **Arithmetic Mean or Average**:-The mean or average value is a single value within the range of the data that is used to represent all the values in the series.Since an average is somewhere within the range of the data, it is also called a measure of central value. It is calculated by;

$$\text{Mean } (\overline{X}) = \frac{\sum X}{N}$$

Where,

$\overline{X}$ = Arithmetic Mean

$\sum X$ = Sum of values of all items, and,

N = Number of items

2. **Standerd Deviation:-** The standard deviation is the measure that is most often used to describe variability in data distributions.It can be thought of as a rough measure of the average amount by which observations deviate on either side of the mean.Denoted by Greek letter's (read as sigma), standard deviation is

extremely useful for judging the representatives of the mean. Standard deviation is calculated as;

$$\text{Standerd deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{x})^2}{N}}$$

Where,

| | | |
|---|---|---|
| $\sigma$ | = | Standerd deviation |
| $\sum(X-\bar{x})^2$ | = | Sum of squares of the deviations measured from arithmetic average. |
| N | = | Number of items |

3. **Coefficient of Correlation**:- Correlation is a statistical tool design to measure the degree of association between two or more variables.In other word if the changes in one variable affects the changes in other variable,then the variable are said to be co-related when it is used to measure the relationship between two variables, then it is called simple correlation.The coefficient of correlation measures the degree of relationship between to sets of figures. Among the various methods of finding out coefficient of correlation, Karl Pearson's method is applied in the tudy.The result of coefficient of correlation is always lie between +1 and -1.The formula for the calculation of coefficient of correlation between X and Y is given below.

$$r = \frac{\sum x_1 x_2}{\sqrt{\sum x_1^2 \sum x_2^2}}$$

Where,

| | | |
|---|---|---|
| r | = | Correlation coefficient |
| $\sum x_1$ | = | $X_1 - \bar{X}_1$ |
| $\sum x_2$ | = | $X_2 - \bar{X}_2$ |

Under this topic,Karl Pearson's correlation coefficient is used to measure the degree of relationship between the following variables.

1. Coefficient of correlation between Total Deposit and Total Credit.
2. Coefficient of correlation between Total Deposit and Net Profit.

3. Coefficient of correlation between Total Deposit and Loan & Advances.
4. Coefficient of correlation between Deposit and Interest Rate.

The interpretation of calculated valve of correlation cofficient by following way.

- If $r = 0$, then there is no correlation between variables.
- If $r > 0$, then there is positive correlation between variables.
- If $r < 0$, then there is negative relation between variables.
- If $r = +1$,then there is perfect positive correlation.
- If $r = -1$, then there is perfect negative correlation.

4. **Least Square Linear Trend Analysis:-** Trend analysis has been a very useful and commonly applied statistical tool to forecast the future events in quantitative terms. On the basis of tendencies in the dependent variables in the past periods, the future trend is predicted. This analysis takes the historical data as the basis of forecasting. This method of forecasting the future trend is based on the assumptions that the past tendencies of the variable are repeated in the future or the past events affect the future events significantly The future trend is forecasted by using the following formula.

$$Y = a + bx$$

where,

Y = the dependent variable

a = the origin i. e. arithmetic mean

b = the slope coefficient i. e. rate of change

X= the independent variable

# CHAPTER - FOUR

# PRESENTATION AND ANALYSIS of DATA

The chapter is devoted to the presentation, analysis, interpretation and scoring the empirical finding of the study through a defined research methodology. Getting at the study objectives, a set of financial and statistical tools has been applied .Data collected from several sources have been inserted in the tabular form in terms of homogeneity of data. Tables compiled for the analysis have been presented in Annexes Necessary graphs and diagrams have been included to clarify the actual status of the financial institutionss. This section analyzes the investment portfolio of financial institutionss through the following tools.

- Risk and Return analysis of individual assets and investment portfolio
- Analysis of ratio
- Least square Linear Trend Analysis

## 4.1 Portfolio Investment, Risk and Return Analysis of API FINANCE

Financial institutions is a vital element in the investment analyzing process hence calls for adequate attention. Investment involving greater risk expects higher return than the investment with lower risk .The relationship between risk and return is perceived by individuals based on their attitude for compensation. The main aim of risk and return is to appraise investment performance to explore combination of investments maximizing returns and minimizing risk or accomplishing both. Risk, however enjoys a pivotal role in the investment analysis. financial institutionss or investors generally avoid invest their money in one risky asset only. Nevertheless, they tend to hold portfolio of several assets to diversify the investment risk. On the portfolio context, the contribution of each asset to the portfolio risk is the portion of relevant risk of the asset. The measurement of return in rupees or percentage is a simple statistical process, while the measure of risk involves a complex process. Risk can be measured in many ways using statistical techniques, such as range, semi-inter quartile range, mean deviation, standard deviation and coefficient of variance etc. Among them, standard deviation is commonly used for measuring risk on investment. In this section, standard deviation and coefficient of variation are adapted as the measuring tools for risk and return. Then it has been endeavored to explore the effects of portfolio diversification.

### 4.1.1 Investment Portfolio of API Finance

portfolio simply represents the practice among the investors of having their funds in more than one asset. The combination of investment in two or more than two assets is called a portfolio. Portfolio theory deals with the selection of optimal portfolio i.e. the portfolio that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return. Portfolio theory has been developed for the financial assets. Thus making investment from the selected optimal portfolio i.e. the portfolio that provides the highest rate of return with least possible amount of risk is the real investment portfolio.

**Table: 4.1**

**Investment Portfolio of API Finance**

| Year | Govt. or NRB Bond | Inter Banking Lending | Loan & Advance | Other Investment |
|---|---|---|---|---|
| **2063/064** | - | - | 20,906.51 | - |
| **2064/065** | - | - | 95,610.17 | - |
| **2065/066** | - | - | 307,943.88 | - |
| **2066/067** | 4921.98 | - | 385,445.12 | - |
| **2067/068** | 65000.00 | - | 548,060.45 | - |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

The above table shows that there is no any investment in the first three fiscal year without loan and advance. In the fiscal year 2066/067 the company made an investment of Rs.4921.8 thousand and Rs. 65000 in the fiscal year 2067/068. The company uses all collected fund in the loan in first three fiscal year.

### 4.1.2 Return on Government Securities

Government securities are the fixed income securities issued by the government. These securities are the ones among the safest of all investments, as government is quite unlikely to default on interest or principal repayments. The return on government securities, such as Treasury Bills, Development Bonds and National Saving Bonds etc is obtained by dividing interest income from government by total investment on government securities.

**Table: 4.2**

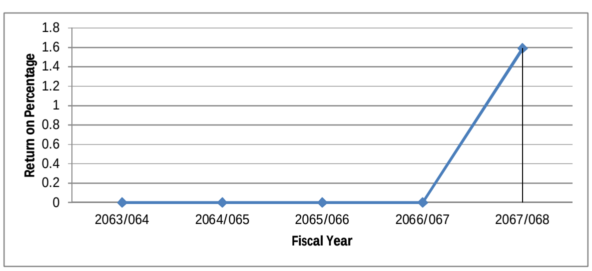
**Return on Government Securities of API FINANCE**

| Year | Interest on Govt. Securities | Investment on Govt. Securities | Return on Govt. Securities($R_g$) |
|---|---|---|---|
| **2063/064** | 0 | 0 | 0 |
| **2064/065** | 0 | 0 | 0 |
| **2065/066** | 0 | 0 | 0 |
| **2066/067** | 0 | 4921.98 | 0 |
| **2067/068** | 78.02 | 4921.98 | 1.59 |
| **Total** | 78.02 | 9843.96 | 1.59 |
| Average | | | 0.318 |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

**Figure: 4.1**

**Trend of Return on Government Securities of API FINANCE**



The table no 4.1 shows that in an average API FINANCE generate 1.59% return on the investment made in government securities. There is no any investment in government securities in the first three years.

### 4.1.3 Return on Loan and Advances

Loan and advances are the major source income for financial institutionss. The facility of granting loan and advances is one of the important services which customers of financial institutionss can enjoy. Hence to realize their objectives, the financial institutionss invest in several sectors like agriculture, industry and sectors to earn a good return from loan and advances. The return on loan and advances is computed by dividing total interest earned from loan and advances to total amount of loan and advances.

**Table: 4.3**

**Return on Loan & Advances of API FINANCE**

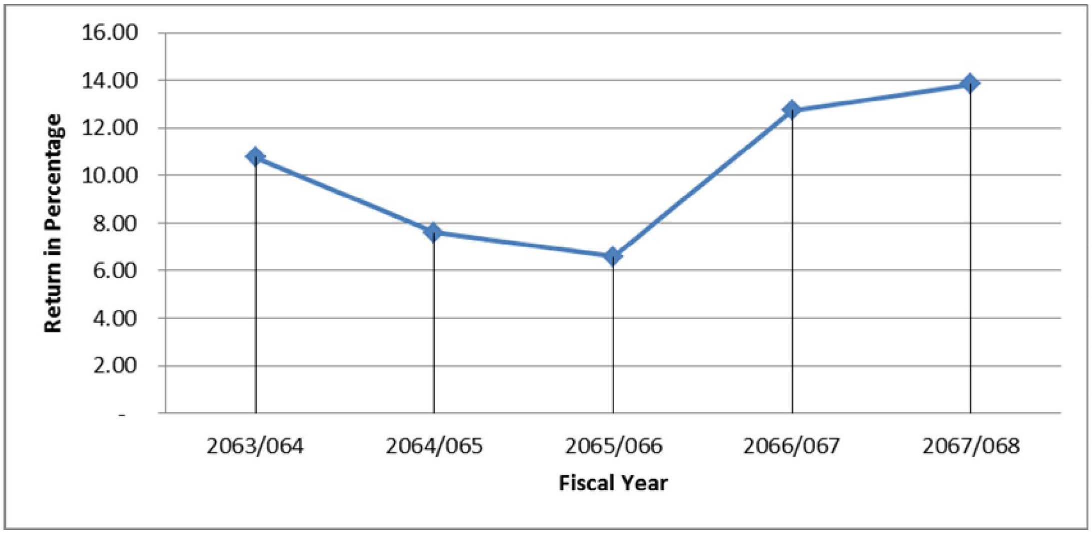
| Year | Interest on Loan & Advances | Investment on Loan & Advances | Return on Loan & Advances($R_l$) |
|---|---|---|---|
| **2063/064** | 2248.89 | 20906.51 | 10.76 |
| **2064/065** | 7276.00 | 95610.17 | 7.61 |
| **2065/066** | 20312.64 | 307943.88 | 6.60 |
| **2066/067** | 49086.51 | 385445.118 | 12.74 |
| **2067/068** | 75846.46 | 548060.45 | 13.84 |
| **Total** | | 1357966.128 | 51.54 |
| Average | | | 10.31 |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

The table no 4.2 shows that in an average API FINANCE generate 10.31% return on the investment made in loan & advances. However, it demonstrates decreasing trend in first three years after that increasing trend in last two years of API FINANCE in the return on loan & advances. During the study period the greatest return is 13.84% in FY 2067/068 and the lowest is 6.60% in FY 2065/066.

**Figure: 4.2**

**Trend of Return on Loan & Advances of API FINANCE**




### 4.1.4 Return on Share and Debenture

The return on share and debenture comprise dividend yield and capital gain yield (change in market price). In other words, return is the combination of capital gain yield and dividend yield. Capital gain yield can be calculated by the difference the current year price and the last year price with respect to the last year price. However, dividend yield is calculated by dividend per share divided by market price per share.

**Table: 4.4**

**Return on Share & debenture of API FINANCE**

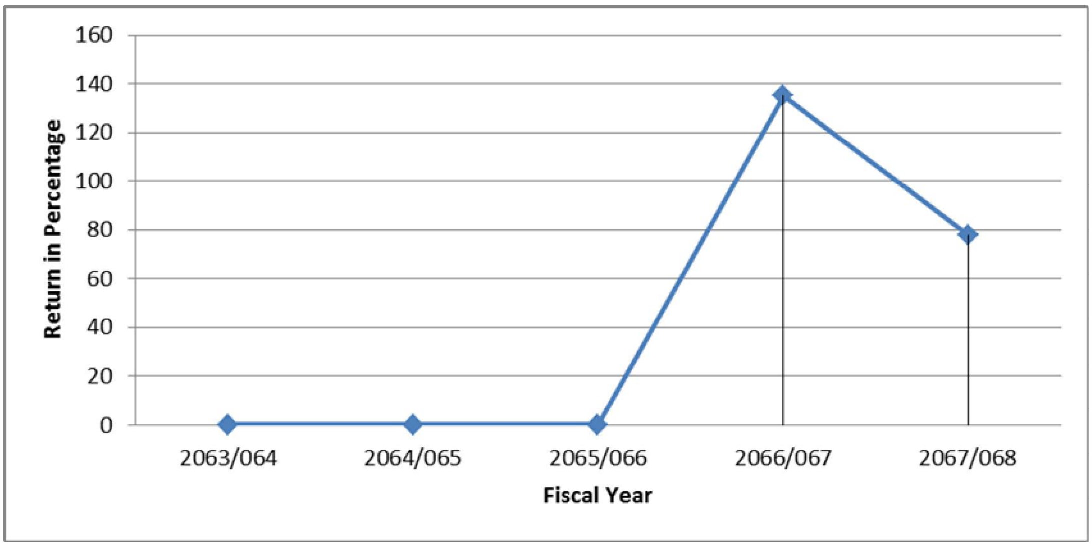
| Year | Market Value Per Share | Dividend Per Share | Return on Share($R_s$) |
|---|---|---|---|
| 2063/064 | 100 | 0 | 0 |
| 2064/065 | 100 | 0 | 0 |
| 2065/066 | 100 | 0 | 0 |
| 2066/067 | 235 | 0 | 135 |
| 2067/068 | 158 | 20 | 78 |
| Total | 793 | 20 | 213 |
| Average | | | 42.6 |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

The above table shows that in an average API FINANCE generate 42.6% return on the share & debenture. In the first four year the company share is not listed in the NEPSE so the market value of share is assume to be equal to par value of share and the dividend is not pay by the company in the first fourth year. In the year 2067/068 the company paid the dividend of 20% and it generate 135% & 78% return in the fiscal year 2066/067 & 2067/068 respectively.

**Figure: 4.3**

**Trend of Return on Share & debenture of API FINANCE**




## 4.2 Risk on Individual Investment

Risk is the variability of return. It is the deviation between actual and expected return. If there is certainty of return there is no risk at all. Risk is measured by its variation and standard deviation.

### 4.2.1 Risk on Government Securities

In this study government security includes the investment in treasure bills and Nepal government saving bonds. Risk in government securities is less than the other securities. The risk on government security is computed as follows.

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

**Table: 4.5**

**Calculation of Risk on Government Securities of API FINANCE**

| Year | Return on Govt. Securities($R_g$) | $(R_g - \bar{R}_g)$ | $(R_g - \bar{R}_g)^2$ |
|---|---|---|---|
| **2063/064** | 0 | -0.318 | 0.101124 |
| **2064/065** | 0 | -0.318 | 0.101124 |
| **2065/066** | 0 | -0.318 | 0.101124 |
| **2066/067** | 0 | -0.318 | 0.101124 |
| **2067/068** | 1.59 | 1.272 | 1.617984 |
| **Total** | **1.59** | **0.0** | **2.02248** |
| **Average** | **0.318** | **Standard Deviation** | **0.7111** |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

The table shows that the average return on government securities of API FINANCE is 0.318% and the standard deviation which represents risk is 0.7111. It reveals that the risk on investment on government securities of API FINANCE is 0.7111 which indicates the riskiness on government securities. The standard deviation clearly indicates that there is some minimal risk associated with government securities despite general assumption of no-risk on such type of securities.

### 4.2.2 Risk on Loan and Advances

Loan and advance is the amount which is lending to the different persons or institutions for different purpose. It is the high risk assets for financial institution business. The risk on loan & advance is computed as follows.

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\sum(R_l - \bar{R}_l)^2}{n-1}}$$

**Table: 4.6**

**Calculation of Risk on Loan & Advances of API FINANCE**

| Year | Return on Loan & advance($R_l$) | $(R_l - \bar{R}_l)$ | $(R_l - \bar{R}_l)^2$ |
|---|---|---|---|
| **2063/064** | 10.76 | 0.45 | 0.2025 |
| **2064/065** | 7.61 | -2.7 | 7.29 |
| **2065/066** | 6.6 | -3.71 | 13.7641 |
| **2066/067** | 12.74 | 2.43 | 5.9049 |
| **2067/068** | 13.84 | 3.53 | 12.4609 |
| **Total** | 51.54 | **0.0** | **39.6224** |
| **Average** | 10.31 | **Standard Deviation** | **3.1437** |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

The above table shows that the average return on loan and advances of *API FINANCE* is 10.31% and the standard deviation which represents risk is 3.1437. It reveals that the risk in investment on loan and advances of *API FINANCE* is 3.1437 which indicates the riskiness on loan and advances.

### 4.2.3 Risk on Share & Debenture

Risk on share and debenture is calculated as follows.

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\sum(R_s - \bar{R}_s)^2}{n-1}}$$

**Table: 4.7**

**Calculation of Risk on Share & Debenture of API FINANCE**

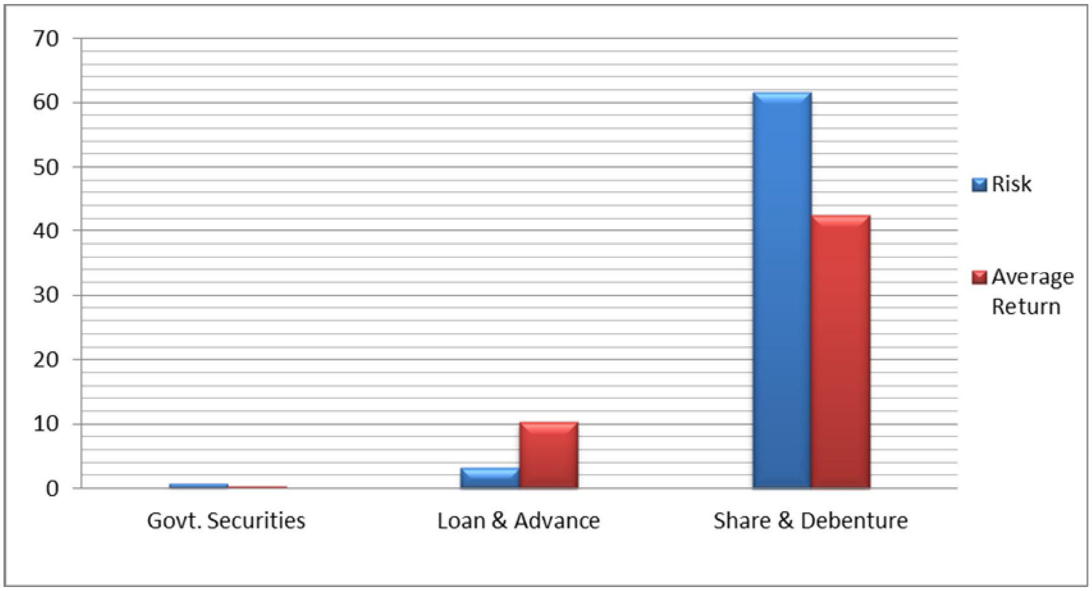
| Year | Return on Share & Debenture($R_s$) | $(R_s - \bar{R}_s)$ | $(R_s - \bar{R}_s)^2$ |
|---|---|---|---|
| **2063/064** | 0 | -42.6 | 1814.76 |
| **2064/065** | 0 | -42.6 | 1814.76 |
| **2065/066** | 0 | -42.6 | 1814.76 |
| **2066/067** | 135 | 92.4 | 8537.76 |
| **2067/068** | 78 | 35.4 | 1253.16 |
| **Total** | 213 | **0.0** | **15235.2** |
| **Average** | 42.6 | **Standard Deviation** | **61.7155** |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

The table 4.5 listed above reveals the risk (Standard Deviation) of return on Share and Debenture of API FINANCE. The Standard deviation of return on Share and Debenture of API FINANCE is 61.7155. The Standard deviation portrays more risk in share and debenture than investment on loan and advances and government securities. Thus it is clear that investment on share and debenture is more risky. It is shown in the following figure.

**Figure: 4.4**

**Risk and Return of API FINANCE**




Above figure shows that the high return in government securities and loan & advance than the risk and low return in the share & debenture than risk so investment in loan & advance and government securities is better than the investment in share & debenture.

## 4.3 Return on Investment Portfolio

The return on portfolio is the weighted average of the expected returns of the individual stock in the portfolio, with the weights being the proportion of the investment on each security in the portfolio equation.  financial institutionss invest their funds in government securities, share and debenture and loan and advances. The weight of investment on various assets and their portfolio of returns can be calculated as below.

Portfolio return ($R_p$) = $W_g\bar{R}_g + W_l\bar{R}_l + W_s\bar{R}_s$

**Table 4.8**

**Portfolio Return on Investment of API FINANCE**

| S.N | Assets | Average Rate of Return($\bar{R}$) | Weight/Proportion (W) |
|---|---|---|---|
| 1 | Return on Govt. Securities ($R_g$) | 0.318 | 0.135 |
| 2 | Return on Loan & Advance ($R_l$) | 10.31 | 0.601 |
| 3 | Return on Share & Debenture ($R_s$) | 42.6 | 0.264 |
| 4 | Portfolio Return ($R_p$) | 17.48 | |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

From the above table 4.7 the expected return on portfolio of API FINANCE is 17.48 which is more than that of mean rate of return on investment on government securities i.e 0.318 $<$ 17.48, return on loan and advance i.e 10.31 $<$ 17.48 and less than the return on share and debenture i.e. 42.6 > 17.48.

## 4.4 Risk on Investment Portfolio

Expected risk on a portfolio is the function of the proportions invested in the components, the riskiness of the components and correlation of returns on the component securities. It is measured by standard deviation. However the standard deviation of portfolio is not simply the weighted average of standard deviation of individual securities. The portfolio risk is affected by the association of movement of returns of two securities. The degree to which the assets return move together is measured by the covariance. Hence, by combining the measures of individual assets risk, relative asset weights and the co-movement of asset returns (covariance) the risk of the portfolio can be estimated. Thus prior to the calculation of portfolio risk on investment, covariance between two assets return should be calculated.

### 4.4.1 Covariance

It defines the combined risk or accumulated risk between two assets. Covariance and correlation are closely related. Covariance between two assets can be calculated by using following formula.

**Table: 4.9**

**Covariance between Government Securities & Loan and Advance ($COV_{gl}$)**

| Year | $R_g$ | $R_g - \bar{R}_g$ | $R_l$ | $R_l - \bar{R}_l$ | $(R_g - \bar{R}_g)(R_l - \bar{R}_l)$ |
|---|---|---|---|---|---|
| **063/64** | 0 | -0.318 | 10.76 | 0.45 | -0.1431 |
| **064/65** | 0 | -0.318 | 7.61 | -2.7 | 0.8586 |
| **065/66** | 0 | -0.318 | 6.6 | -3.71 | 1.17978 |
| **066/67** | 0 | -0.318 | 12.74 | 2.43 | -0.77274 |
| **067/68** | 1.59 | 1.272 | 13.84 | 3.53 | 4.49016 |
| **Total** | 1.59 | 0.00 | 51.54 | 0.00 | 5.6127 |
| **Average** | 0.318 | - | 10.31 | - | - |

$$= \frac{\sum[(R_g - \bar{R}_g)(R_l - \bar{R}_l)]}{n-1}$$

$$= \frac{5.6127}{5-1}$$

$$= 1.4032$$

The covariance between Government Securities & Loan and Advance is 1.4032 it means if the bank is combined invest in two assets i.e. government securities and loan and advance the risk will be 1.4032 in such investment.

**Table: 4.10**

**Covariance between Government Securities & Share & Debenture ($COV_{gs}$)**

| Year | $R_g$ | $R_g - \bar{R}_g$ | $R_s$ | $R_s - \bar{R}_s$ | $(R_s - \bar{R}_s)(R_s - \bar{R}_s)$ |
|---|---|---|---|---|---|
| **063/64** | 0 | -0.318 | 0 | -42.6 | 13.5468 |
| **064/65** | 0 | -0.318 | 0 | -42.6 | 13.5468 |
| **065/66** | 0 | -0.318 | 0 | -42.6 | 13.5468 |
| **066/67** | 0 | -0.318 | 135 | 92.4 | -29.3832 |
| **067/68** | 1.59 | 1.272 | 78 | 35.4 | 45.0288 |
| **Total** | 1.59 | 0.00 | 213 | 0.00 | 56.286 |
| **Average** | 0.318 | - | 42.6 | - | - |

$$= \frac{\Sigma[(R_g - \bar{R}_g)(R_s - \bar{R}_s)]}{n-1}$$

$$= \frac{56.286}{5-1}$$

$$= 14.07$$

The covariance between Government Securities & Share & Debenture is 14.07 it means if the bank is combined invest in two assets i.e. Government Securities & Share & Debenture the risk will be 14.07 in such investment.

**Table: 4.11**

**Covariance between Loan & Advance and Share & Debenture ($COV_{ls}$)**

| Year | $R_l$ | $R_l - \bar{R}_l$ | $R_s$ | $R_s - \bar{R}_s$ | $(R_l - \bar{R}_l)(R_s - \bar{R}_s)$ |
|---|---|---|---|---|---|
| **063/64** | 10.76 | 0.45 | 0 | -42.6 | -19.17 |
| **064/65** | 7.61 | -2.7 | 0 | -42.6 | 115.02 |
| **065/66** | 6.6 | -3.71 | 0 | -42.6 | 158.046 |
| **066/67** | 12.74 | 2.43 | 135 | 92.4 | 224.532 |
| **067/68** | 13.84 | 3.53 | 78 | 35.4 | 124.962 |
| **Total** | 51.54 | 0.00 | 213 | 0.00 | 603.39 |
| **Average** | 10.31 | - | 42.6 | - | - |

$$= \frac{\sum[(R_l - \bar{R}_l)(R_s - \bar{R}_s)]}{n-1}$$

$$= \frac{603.39}{5-1}$$

$$= 150.84$$

The covariance between Loan & Advance and Share & Debenture is 150.84 it means if the bank is combined invest in two assets i.e. Loan & Advance and Share & Debenture the risk will be 150.84 in such investment.

### 4.4.2 Portfolio Risk

Portfolio risk means combined risk between different investments. Portfolio risk is measured by its standard deviation and lower the standard deviation lowers the risk and vice versa. It can be computed by using the following formula.

Portfolio Standard Deviation between government securities, loan & Advance and share & debenture ($\delta_p$)

$$\delta_p = \sqrt{W_g^2\,\delta_g^2 + W_l^2\delta_l^2 + W_s^2\delta_s^2 + 2COV_{gl}W_gW_l + 2COV_{gs}W_gW_s + 2COV_{ls}W_lW_s}$$

$$\sqrt{0.135^2 \times 0.711^2 + 0.601^2 \times 3.143^2 + 61.72^2 \times 0.264^2 + 2 \times 1.4 \times 0.135 \times 0.601 + 2 \times 14.07 \times 0.135 \times 0.264 + 2 \times 0150.84 \times 0.601 \times 0.264}$$

= 3.47

### 4.4.3 Correlation Analysis

Correlation coefficient defines the degree if relationship between two assets whether they are going in same direction or opposite direction. It always range from +1 to -1, it can be calculated by using the following formula.

Correlation between Government Securities and Loan & Advance ($r_{gl}$) $= \dfrac{COV_{gl}}{\delta_g\,\delta_l}$

$$= \frac{1.4032}{0.711 \times 3.1437} = 0.6278$$

Correlation between Government Securities and Share & Debenture ($r_{gs}$) $= \dfrac{COV_{gs}}{\delta_g\,\delta_s}$

$$= \frac{14.07}{0.711 \times 61.7155} = 0.3207$$

Correlation between Loan & Advance and Share & Debenture ($r_{ls}$) $= \dfrac{COV_{ls}}{\delta_l\,\delta_s}$

$$= \frac{150.84}{3.1437 \times 61.7155} = 0.7775$$

All of the above calculation are shown in the following table and described.

**Table: 4.12**

**Portfolio Risk, Covariance & Correlation between Different Variables**

| Particular | Covariance | Correlation |
|---|---|---|
| $r_{gl}$ & $COV_{gl}$ | 1.4032 | 0.6278 |
| $r_{gs}$ & $COV_{gs}$ | 14.07 | 0.3207 |
| $r_{ls}$ & $COV_{ls}$ | 150.84 | 0.7775 |
| $\delta_p$ | 3.47 | |

*Source: Appendix*

From the above table 4.12, the expected risk of portfolio (standard deviation) of API FINANCE is-3.47% which is considerably less than the expected portfolio return of API FINANCE. It means investment in combined three assets is less risky. The covariance and correlation between government securities and loan and advance is 1.4032 & 0.6278 respectively it means there is moderate degree of positive relationship between government securities and loan and advance in this condition a little bit of risk can be minimized by changing the proportion of investment made between two assets.

The covariance and correlation between government securities and share and debenture is 14.07 & 0.3207 it means there is low degree of positive relationship between government securities and share and debenture in this condition more risk can be minimized by changing the proportion of investment made between two assets. Similarly, the covariance between loan and advance and share and debenture is 150.84 & 0.7775 respectively it means there is high degree of positive correlation in this condition a little bit of unit of risk cannot be minimized.

## 4.5 Ratio Analysis

Ratio analysis is the process of establishing the significant relationship between the variables of financial statement to provide a meaningful understanding of the performance and the financial position of a firm. As a tool of financial analysis, ratio can be expressed in percentage. With the help of ratio analysis, the quantitative judgment can be obtained very easily and timely with respect to financial performance of the firm. In this section, major ratios related to the investment mechanism of financial institutionss are calculated and analyzed.

### 4.5.1 Total Investment to Total Deposit Ratio

The ratio is used to measure the ability of financial institutionss to successfully mobilize the total deposits of investment. This ratio is obtained by dividing total investment by total deposit. In general, the high ratio is the indicator of high success to mobilize the financial institutionsing funds as investment and vice-versa.(Total investment not include the amount of loan & advance)

**Table: 4.13**

**Computation of total Investment to Total Deposit Ratio**

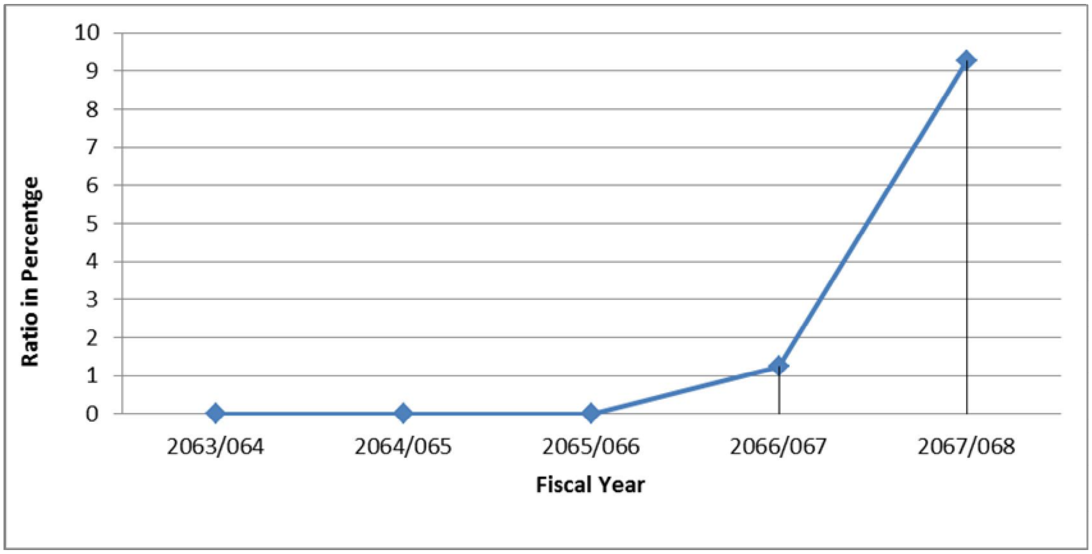
| Year | Total Investment(TI) | Total Deposit(TD) | TI to TD Ratio |
|---|---|---|---|
| **2063/064** | 0 | 20565.71 | 0 |
| **2064/065** | 0 | 111978.36 | 0 |
| **2065/066** | 0 | 326110.07 | 0 |
| **2066/067** | 4921.98 | 401740.56 | 1.23 |
| **2067/068** | 65000.00 | 702533.16 | 9.25 |
| **Mean** | | | 2.10 |
| **SD** | | | 4.04 |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

The above table shows that the average investment to deposit ratio is 2.10% and the highest ratio is 9.25% in the FY 2067/068 and the lowest ratio is 1.23 in 2066/067. There is no investment made by API FINANCE in the beginning three years. The overall trend of TI to TD ratio is increasing in the last two years.

**Figure: 4.5**

**Trend of Total Investment to Total Deposit Ratio**




### 4.5.2 Investment on Government Securities to Total Investment Ratio

This ratio is very useful for understanding to what extent the financial institutions is successful to mobilize their total outside investment on different types of government securities to maximize the income. The ratio is computed by dividing investment on government securities by total outside investment. A high ratio indicates the efficiency of firms in overall investment on government securities and vice –versa.

**Table: 4.14**

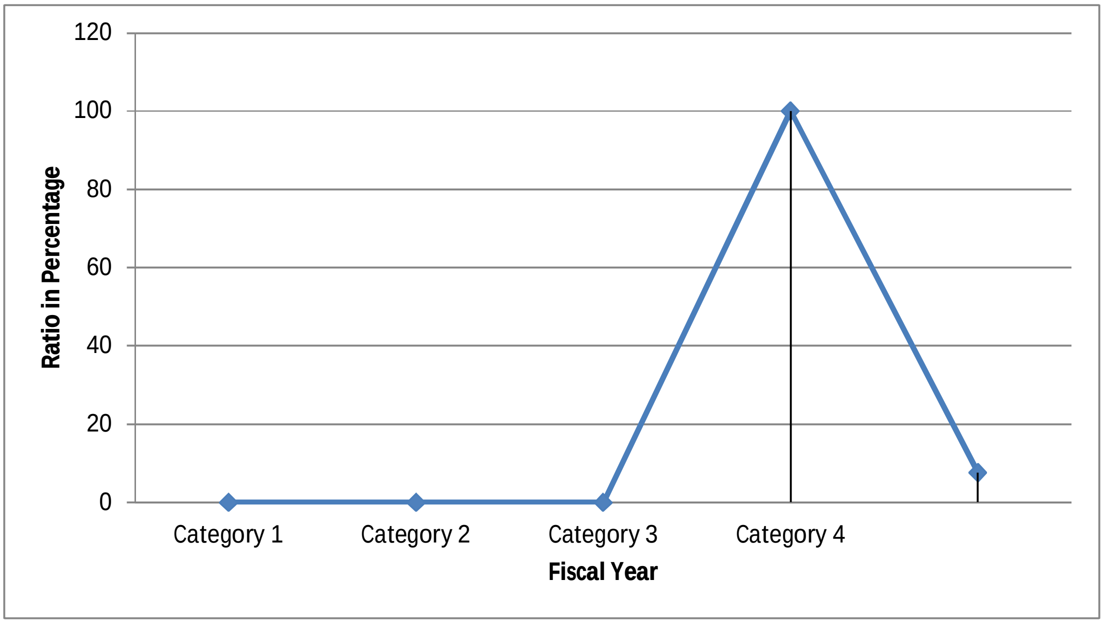
**Computation of Investment in Govt. Securities to total Investment Ratio**

| Year | Total Investment(TI) | Investment in Govt. Securities (IGS) | IGS to TI Ratio |
|---|---|---|---|
| 2063/064 | 0 | 0 | 0 |
| 2064/065 | 0 | 0 | 0 |
| 2065/066 | 0 | 0 | 0 |
| 2066/067 | 4921.98 | 4921.98 | 100.00 |
| 2067/068 | 65000 | 4921.98 | 7.57 |
| Mean | | | 21.51 |
| SD | | | 44.00 |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

**Figure: 4.6**

**Trend of Investment in Govt. Securities to Total Investment Ratio**




The above table 4.14 shows the percentage of investment made to government securities out of total investment. There is no investment made by API FINANCE in the beginning three years, the average IGS to TI ratio is 21.51% it means the low amount investment made in government securities out of total investment. The highest ratio is 100% in FY 2066/067 and the lowest ratio is 7.57 in the FY 2067/068.

### 4.5.3 Return to Total Assets Ratio

This ratio measures the profitability of financial institutionss in terms of total assets. The ratio is vital for measuring financial performance of the firms or the effective utilization of resources in different sectors and yields a higher return for financial institutionss. This ratio is calculated by dividing net profit after tax (NPAT) by total assets.

**Table: 4.15**

**Computation of Return to Total Assets Ratio**

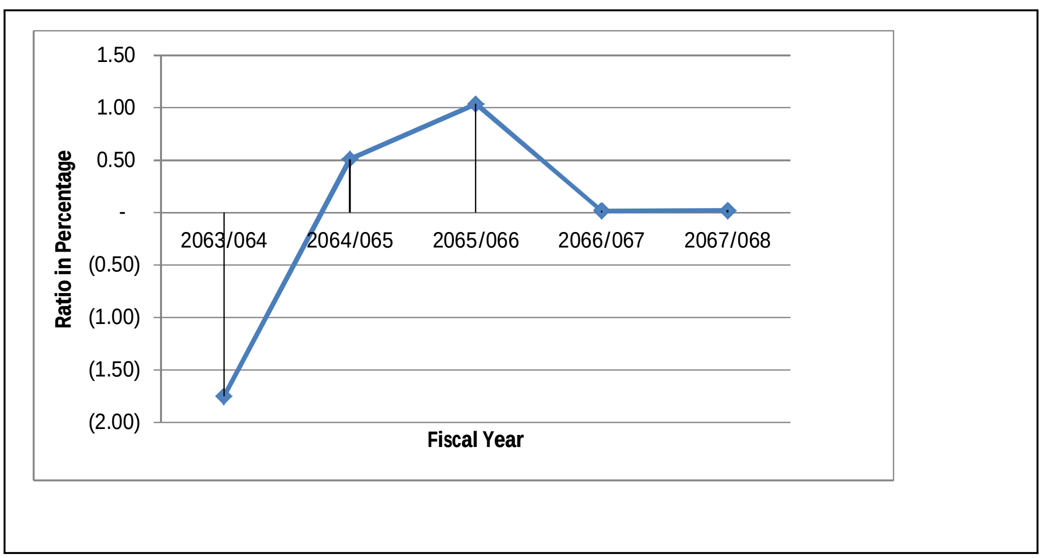
| Year | Net Profit After Tax (NPAT) | Total Assets (TA) | ROTA (NPAT/TA) |
|---|---|---|---|
| 2063/064 | -594.378 | 34056.78 | -1.75 |
| 2064/065 | 875.55 | 172984.65 | 0.51 |
| 2065/066 | 4148.94 | 400519.69 | 1.04 |
| 2066/067 | 8591.100 | 513579.70 | 1.67 |
| 2067/068 | 21244.43 | 975837.95 | 2.18 |
| Mean | | | 0.73 |
| SD | | | 1.52 |

*Source: Annual Report of API FINANCE from 2063/064 to 2067/068*

Table 4.12 shows the percentage of profit made in term of total assets. This ratio measure the how effectively utilized the total assets by the financial institutions. The average ROTA ratio is 0.0072 the highest ratio is 0.02177 in FY 2067/068 and the lowest ratio is -0.017 in the FY 2063/064. The overall trend of ROTA ratio is increasing over the study period. It shows the normal position of financial institutions in term of resource utilization.

**Figure: 4.7**

**Trend of Return to Total Assets Ratio**



## 4.6 Major Findings

The major findings of the study are as follows

- There is no any investment in the first three fiscal year without loan and advance. In the fiscal year 2066/067 the company made an investment of Rs.4921.8 thousand and Rs. 65000 in the fiscal year 2067/068. The company uses all collected fund in the loan in first three fiscal year.
- In an average API FINANCE generate 1.59% return on the investment made in government securities. There is no any investment in government securities in the first three years.
- in an average API FINANCE generate 10.31% return on the investment made in loan & advances. During the study period the greatest return is 13.84% in FY 2067/068 and the lowest is 6.60% in FY 2065/066.
- in an average API FINANCE generate 42.6% return on the share & debenture. In the year 2067/068 the company paid the dividend of 20% and it generate 135% & 78% return in the fiscal year 2066/067 & 2067/068 respectively.
- The risk on investment on government securities of API FINANCE is 0.7111 which indicates the riskiness on government securities. The risk in investment on loan and advances of *API FINANCE* is 3.1437. The Standard deviation of return on Share and Debenture of API FINANCE is 61.7155.
- The expected return on portfolio of API FINANCE is 17.48 which is more than that of mean rate of return on investment on government securities i.e 0.318 < 17.48, return on loan and advance i.e 10.31 < 17.48 and less than the return on share and debenture i.e. 42.6 > 17.48.
- The covariance between Government Securities & Loan and Advance is 1.4032, Government Securities & Share & Debenture is 14.07 and Loan & Advance and Share & Debenture are 150.84.
- The expected risk of portfolio (standard deviation) of API FINANCE is-3.47% which is considerably less than the expected portfolio return of API FINANCE.
- The covariance and correlation between government securities and loan and advance is 1.4032 & 0.6278 respectively it means there is moderate degree of positive relationship between government securities and loan and advance.

- The covariance and correlation between government securities and share and debenture is 14.07 & 0.3207 it means there is low degree of positive relationship between government securities.
- The covariance between loan and advance and share and debenture is 150.84 & 0.7775 respectively it means there is high degree of positive correlation between loan and advance and share and debenture.
- The average investment to deposit ratio is 2.10% and the highest ratio is 9.25% in the FY 2067/068 and the lowest ratio is 1.23 in 2066/067.
- The average IGS to TI ratio is 21.51% it means the low amount investment made in government securities out of total investment. The highest ratio is 100% in FY 2066/067 and the lowest ratio is 7.57 in the FY 2067/068.
- The average ROTA ratio is 0.0072 the highest ratio is 0.02177 in FY 2067/068 and the lowest ratio is -0.017 in the FY 2063/064.

# CHAPTER - FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter summarizes the entire study, draws the conclusions from the study and presents the recommendation for further improvement. Summary incorporates a brief description of the whole study. Conclusions are drawn on the analysis of relevant data using various financial and statistical tools that presents strength, weakness, opportunities and threats of the Financial Institutionss. Recommendations are presented in terms of suggestions prepared based on findings and conclusion.

## 5.1 Summary

Financial Institutionss are the major components of financial system which occupy very important place in the framework of every economy. They play a vital role in the capital formation, proper utilization of the collected resources and provide a host of financial services. Financial Institutionss collect money from the public providing sound interest and subsequently gain profit through lending it in business organization, industry, agriculture sectors etc. Hence it can be stated the main task of financial Institutionss is to mobilize idle resources in productive areas by collecting it from scattered sources for generation of the profit. Financial Institutions plays the intermediary role between saving and investment caters the credit needs of the customers and the investment requirements of the savers. Thus it is evident that the efficient and stable financial systems are essential for an orderly economic growth. Successful formulation and effective implementation of the investment policy is the prime requisite for refined performance of the Financial Institutionss. In the similar manner, a good investment policy has a positive impact on the economic development of the country and vice-versa. Financial Institutions should attract its customers through implementing the best or competitive investment policy. It helps increase the quality of the Financial service as well as quality deposit and investment in various sectors. Investment management of a financial Institutions is guided by the investment policy adopted by the financial Institutions. The financial institutions investment policy fosters the investment operation of the financial institutions to be efficient and profitable by minimizing the interest risk. Thus the financial institutions should mobilize its deposits and the other funds to profitable, secured, stable and marketable sectors to earn a good profit.

Investment portfolio is the collection of securities. It simply represents the practice among investors having their funds on more than one asset. Portfolio theory deals with the selection of optimal portfolio. In other words, portfolio provides the highest possible return for any specified return. The income or profit of the financial institutions entirely depends upon the investment decision. Considering the fact, the Financial Institutions should never invest its funds in individual security alone, which is subject to massive depreciation and fluctuations. Financial institutionss should accept those types of securities which are commercial, marketable, stable, liquid and profitable. A financial institution should not lay all its eggs in one basket, which means, to minimize risk a Financial Institutions must diversify its investment on different sectors and different securities, for this purpose the main objective of the study is to identify the current situation of investment portfolio of API FINANCE.

To achieve the objectives of the study, various analysis, such as risk and return analysis of individual assets as well as investment portfolio, ratio analysis and trend analysis have been launched. During the research work, a brief review of literature has been conducted. In this connection various textbooks and published journals have been reviewed. The required data for the study are collected from the concerned Financial Institutionss, NRB, NEPSE and SEBON. To meet the need and the objectives, the secondary data were complied, processed, and tabulated for the better presentation.With respect to risk and return analysis, return on the government securities is low but it has lower risk .In the similar manner, the loan and advances give more return than the government securities, but it has also higher risk than government securities .Likewise, share and debentures are also high risky securities which provide higher return. Regarding ratio analysis, different ratios related with investment portfolio have been used.

## 5.2 Conclusion

The investment plan is the challenging subject on the Financial Institutionss. The success of the Financial Institutionss heavily depends on planning of investment. The successful formulation and effective implementation of investment policy should be developed by adopting portfolio concept. Financial Institutionss should mobilize their resources on secured, stable, profitable, liquid, and marketable securities for achieving their goal. However, it is not feasible to achieve such goal in absence of the portfolio concept. Investment portfolio is the risk mitigating mechanism, which helps minimize risk and maximize return through diversification.

The general assumption is that there is little risk on government securities. It is proved from the above conducted analysis. The standard deviation of the government securities is the lower than standard deviation of other securities. The risk and return and the standard deviation both are higher than other assets. Hence it is clear from the analysis that the investment on share and debenture is highly risky than the other assets. Portfolio return is slightly lower than the average return from loan and advances, and share and debenture, but higher than that of government securities. Likewise, the risk on investment portfolio is less than that of risk on share and debenture and loan and advances, but is higher than that of risk on government securities. API FINANCE accorded first priority for investing the resources on loan and advances. Likewise, the Financial Institutions offered second priority to government securities and the least priority to share and debenture.The Financial Institutions is hesitant to mobilize the resources on share and debenture of the other companies. The Financial Institutions invest quite a nominal percentage of totals outside investment on share and debenture.

Based on the analysis and findings of the Study, Financial Institutionss are weak to invest their resources in more liquid assets and less risky sectors. Furthermore, the Financial Institutionss are unable to capitalize the opportunities by making suitable combination of investment portfolio. From risk and return analysis and individual investment assets, it can be inferred that investment on loan and advances is better than investment on share and debenture or investment on government securities, because loan and advances provides fixed interest income. Hence Financial Institutionss are interested to invest their greater chunk of resources on loan and advances in various economic sectors, since return from loan and advances are less volatile than other assets. On the other hand, the return from share and debenture displays wide fluctuation. Owing to the high fluctuation of return from share and debenture, Financial Institutionss invested a very nominal percentage of the total investments into share and debenture. This shows that Financial Institutionss are more interested to invest their funds in the less risky sectors. From the resource utilization point of view, Financial Institutionss mostly mobilize their resources on loan and advances. They provide low priority to mobilize their funds on government securities.

## 5.3 Recommendation

Based on analysis and findings of the study the following recommendations can be made as suggestions to improve its portfolio of investment addressed by this study

- It is found that Api Finance invests a very low proportion of the total investment on share and debenture of the other companies. Therefore, Api Finance is suggested to give more priority to investment on share and debenture to minimize the risk.
- The investment of the Financial Institutions is strongly dominated by loan and advances. Hence they should have a compendium of optimum portfolios of different securities. More investment in Loan & Advances increases the risk of liquidity so the company should diversify the investment in such products which can be converted in liquid in a short period so that liquidity can be managed anytime.
- Api Finance is utilizing resources particularly in the unproductive sectors. Hence, it should identify new investment sectors through efficient investment programs in retail Financial Institutionsing such as education loan, automobile loan, small-medium enterprise loan, youth self-employment loan, green energy sector oriented consortium loan etc.
- The total investment fund with respect to total deposit of Api Finance is pretty low. Hence, it calls for identifying the new investment sectors, and efficient as well as effective investment in those sectors.
- The profitability position of Api Finance is near to satisfaction. However, its investment on various assets is less stable. Hence the Financial Institutions should upgrade its stability status and decrease the variability of investment.
- The profitability position of Api Finance is the weakest in relation to return on total assets. Hence, the Financial Institutions should effectively utilize its overall resources to achieve the highest profit margins.

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## APPENDIX

### 1. Calculation of Risk on Government Securities of API FINANCE

| Year | Return on Govt. Securities($R_g$) | $(R_g - \bar{R}_g)$ | $(R_g - \bar{R}_g)^2$ |
|---|---|---|---|
| **2063/064** | 0 | -0.318 | 0.101124 |
| **2064/065** | 0 | -0.318 | 0.101124 |
| **2065/066** | 0 | -0.318 | 0.101124 |
| **2066/067** | 0 | -0.318 | 0.101124 |
| **2067/068** | 1.59 | 1.272 | 1.617984 |
| **Total** | **1.59** | | **2.02248** |

$$\text{Mean } (\bar{X}) = \frac{\sum X}{n-1}$$

$$= \frac{1.59}{5-1} = 0.318$$

$$\text{Standerd deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{x})^2}{N}}$$

$$= \sqrt{\frac{2.02248}{5-1}} = 0.7111$$

### 2. Calculation of Risk on Loan & Advances of API FINANCE

| Year | Return on Loan & advance($R_l$) | $(R_l - \bar{R}_l)$ | $(R_l - \bar{R}_l)^2$ |
|---|---|---|---|
| **2063/064** | 10.76 | 0.45 | 0.2025 |
| **2064/065** | 7.61 | -2.7 | 7.29 |
| **2065/066** | 6.6 | -3.71 | 13.7641 |
| **2066/067** | 12.74 | 2.43 | 5.9049 |
| **2067/068** | 13.84 | 3.53 | 12.4609 |
| **Total** | 51.54 | **0.0** | **39.6224** |

$$\text{Mean } (\bar{X}) = \frac{\sum X}{n-1}$$

$$= \frac{51.54}{5 \quad 1} = 10.31$$

$$\text{Standerd deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{x})^2}{N}}$$

$$= \sqrt{\frac{39.6224}{5-1}} = 3.1437$$

### 3. Calculation of Risk on Share & Debenture of API FINANCE

| **Year** | **Return on Share & Debenture($R_s$)** | $(R_s - \bar{R}_s)$ | $(R_s - \bar{R}_s)^2$ |
|---|---|---|---|
| **2063/064** | 0 | -42.6 | 1814.76 |
| **2064/065** | 0 | -42.6 | 1814.76 |
| **2065/066** | 0 | -42.6 | 1814.76 |
| **2066/067** | 135 | 92.4 | 8537.76 |
| **2067/068** | 78 | 35.4 | 1253.16 |
| **Total** | 213 | **0.0** | **15235.2** |

$$\text{Mean } (\bar{X}) = \frac{\sum X}{n-1}$$

$$= \frac{213}{5-1} = 42.6$$

$$\text{Standerd deviation}(\sigma) = \sqrt{\frac{\sum(X-\bar{x})^2}{N}}$$

$$= \sqrt{\frac{15235.2}{5-1}} = 61.7155$$

4. **Covariance between Government Securities & Loan and Advance ($COV_{gl}$)**

| Year | $R_g$ | $R_g - \bar{R}_g$ | $R_l$ | $R_l - \bar{R}_l$ | $(R_g - \bar{R}_g)(R_l - \bar{R}_l)$ |
|---|---|---|---|---|---|
| **063/64** | 0 | -0.318 | 10.76 | 0.45 | -0.1431 |
| **064/65** | 0 | -0.318 | 7.61 | -2.7 | 0.8586 |
| **065/66** | 0 | -0.318 | 6.6 | -3.71 | 1.17978 |
| **066/67** | 0 | -0.318 | 12.74 | 2.43 | -0.77274 |
| **067/68** | 1.59 | 1.272 | 13.84 | 3.53 | 4.49016 |
| **Total** | 1.59 | 0.00 | 51.54 | 0.00 | 5.6127 |
| **Average** | 0.318 | - | 10.31 | - | - |

$$= \frac{\Sigma[(R_g - \bar{R}_g)(R_l - \bar{R}_l)]}{n-1}$$

$$= \frac{5.6127}{5-1}$$

= 1.4032

5. **Covariance between Government Securities & Share & Debenture ($COV_{gs}$)**

| Year | $R_g$ | $R_g - \bar{R}_g$ | $R_s$ | $R_s - \bar{R}_s$ | $(R_s - \bar{R}_s)(R_s - \bar{R}_s)$ |
|---|---|---|---|---|---|
| **063/64** | 0 | -0.318 | 0 | -42.6 | 13.5468 |
| **064/65** | 0 | -0.318 | 0 | -42.6 | 13.5468 |
| **065/66** | 0 | -0.318 | 0 | -42.6 | 13.5468 |
| **066/67** | 0 | -0.318 | 135 | 92.4 | -29.3832 |
| **067/68** | 1.59 | 1.272 | 78 | 35.4 | 45.0288 |
| **Total** | 1.59 | 0.00 | 213 | 0.00 | 56.286 |
| **Average** | 0.318 | - | 42.6 | - | - |

$$= \frac{\Sigma[(R_g - \bar{R}_g)(R_s - \bar{R}_s)]}{n-1}$$

$= \frac{56.286}{5-1} = 14.07$

**6. Covariance between Loan & Advance and Share & Debenture ($COV_{ls}$)**

| Year | $R_l$ | $R_l - \bar{R}_l$ | $R_s$ | $R_s - \bar{R}_s$ | $(R_l - \bar{R}_l)(R_s - \bar{R}_s)$ |
|---|---|---|---|---|---|
| **063/64** | 10.76 | 0.45 | 0 | -42.6 | -19.17 |
| **064/65** | 7.61 | -2.7 | 0 | -42.6 | 115.02 |
| **065/66** | 6.6 | -3.71 | 0 | -42.6 | 158.046 |
| **066/67** | 12.74 | 2.43 | 135 | 92.4 | 224.532 |
| **067/68** | 13.84 | 3.53 | 78 | 35.4 | 124.962 |
| **Total** | 51.54 | 0.00 | 213 | 0.00 | 603.39 |
| **Average** | 10.31 | - | 42.6 | - | - |

$= \frac{\sum[(R_l - \bar{R}_l)(R_s - \bar{R}_s)]}{n-1}$

$= \frac{603.39}{5-1}$

$= 150.84$

**ckL kmf0gfG; lnld6]8**

**n]ygfy-&, sf:sL**

## k|fIkt jf;nft

cf j @)^&÷^* b]v cf j @)^(÷&) ;Ddsf]

| kFL tyf bfloTj | jf:tljs | | | | k|fIkt | | |
|---|---|---|---|---|---|---|---|
| | cf j @)^#÷^$ | cf j @)^$÷^% | cf j @)^%÷^^ | cf j @)^^÷^& | cf j @)^&÷^* | cf j @)^*÷^( | cf j @)^(÷&) |
| != z]o/ kFL | 14,000,000.00 | 42,000,000.00 | 60,000,000.00 | 60,000,000.00 | 120,000,000.00 | 240,000,000.00 | 240,000,000.00 |
| @= hu]8f tyf sf]ifx? | (594,378.46) | 5,165,126.06 | 11,381,805.72 | 47,952,279.63 | 35,483,030.92 | 62,046,739.91 | 77,547,204.78 |
| #= C0fkq tyf aG8 | - | - | - | - | - | - | |
| $= ltg{afFL shf{;fk6 | - | - | - | - | - | - | |
| %= lgIf]k bfloTj | 20,565,706.36 | 111,978,358.40 | 326,110,070.53 | 401,740,564.79 | 803,481,129.58 | 1,406,091,976.77 | 2,109,137,965.15 |
| ^= eQmfgL lbgkg{ljnx? | - | - | - | - | - | - | |
| &= k|tflj t tyf eStfgL lbg'afFL | - | - | - | - | 12,000,000.00 | 24,000,000.00 | 24,000,000.00 |
| *= cfos/ bfloTj | - | - | 521,781.83 | 625,211.38 | 731,497.31 | 855,851.86 | 1,001,346.67 |
| (= cGo bfloTj tyf Joj:yf | 85,451.96 | 13,841,161.41 | 2,577,998.32 | 3,261,645.40 | 4,142,289.66 | 5,260,707.87 | 6,681,098.99 |
| **sh kFL tyf bfloTj** | **34,056,779.86** | **172,984,645.87** | **400,591,656.40** | **513,579,701.20** | **975,837,947.48** | **1,738,255,276.40** | **2,458,367,615.59** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| != gub df}Hbft | 955,773.15 | 1,534,529.25 | 3,756,250.90 | 5,370,493.73 | 16,069,622.59 | 28,121,839.54 | 42,182,759.30 |
| @= g]kfn /fi6«a}sdf /x]sf] df}Hbft | 1,214,625.99 | 3,987,138.84 | 6,564,490.72 | 10,913,249.56 | 20,087,028.24 | 35,152,299.42 | 52,728,449.13 |
| #= a}s÷ljlQo ;+yfdf /x]sf] df}Hbft | - | 782,997.31 | 100,000.00 | 659,193.43 | 803,481.13 | 1,406,091.98 | 2,109,137.97 |
| $= dfu tyf cNk ;'rgfdf k|fKt xg] | 8,560,732.16 | 67,404,115.90 | 74,635,869.88 | 89,582,078.77 | 164,713,631.56 | 288,248,855.24 | 426,045,868.96 |
| %= nufgL | - | - | - | 4,921,980.00 | 7,500,000.00 | 9,375,000.00 | 10,312,500.00 |
| ^= shf{;fk6 tyf ljn vl/b | 20,906,513.18 | 95,610,174.50 | 307,943,879.43 | 385,445,118.06 | 738,784,903.66 | 1,333,334,501.18 | 1,879,310,372.12 |
| &= l:y/ ;Dklt | 1,530,507.87 | 1,605,496.21 | 3,331,830.35 | 9,159,825.02 | 12,823,755.03 | 15,516,743.58 | 17,223,585.38 |
| *= u}/ a}sË ;DklQ | - | - | - | - | - | - | |
| (= cGo ;Dklt | 888,627.51 | 2,060,193.86 | 4,259,335.12 | 7,527,762.63 | 15,055,525.26 | 27,099,945.47 | 28,454,942.74 |
| **sh ;Dklt** | **34,056,779.86** | **172,984,645.87** | **400,591,656.40** | **513,579,701.20** | **975,837,947.48** | **1,738,255,276.40** | **2,458,367,615.59** |

***Detail of Investment :***

| SN | Particulars | Actual 2065/066 | Actual 2066/067 | Projected 2067/068 | Projected 2068/069 |
|---|---|---|---|---|---|
| 1 | NRB Govt. Bond/ Treasury Bills | - | 4,921,980.00 | 10,000,000.00 | 10,000,000.00 |
| 2 | Interbank Lending (Financial Instit | - | - | - | - |
| 3 | Other Investment | - | - | - | - |
| | **Total** | **-** | **4,200,000.00** | **10,000,000.00** | **10,000,000.00** |
| | | | **0.41%** | **0.82%** | **0.63%** |

***Detail of Bank Deposits :***

| SN | Particulars | Actual 2065/066 | Actual 2066/067 | Projected 2067/068 | Projected 2068/069 |
|---|---|---|---|---|---|
| 1 | NRB deposit | 6,564,490.72 | 10,913,249.56 | 30,972,835.00 | 66,631,329.36 |
| 2 | Balance at Financial Inst. | 100,000.00 | 659,193.43 | 100,000.00 | 100,000.00 |
| 3 | Money at Call | 74,635,869.88 | 89,582,078.77 | 157,563,029.26 | 192,538,271.40 |
| | **Total** | **81,300,360.60** | **101,154,521.76** | **188,635,864.26** | **259,269,600.76** |

**ckL kmf0gfG; lnld6]8**

**nlytgfy-&, sf:sL**

**k|fl]kt gfkmf gf]S;fg lx;fa**

cf j @)^&÷^* b]lv cf j @)^(÷&) ;Ddsf]

| lj j/0f | jf:tljs | | | | k|fl]kt | | |
|---|---|---|---|---|---|---|---|
| | cf j @)^#÷^$ | cf j @)^$÷^% | cf j @)^%÷^^ | cf j @)^^÷^& | cf j @)^&÷^* | cf j @)^*÷^( | cf j @)^(÷&) |
| != Jofh cfDbfgL | 295,903.77 | 7,275,762.63 | 24,297,244.09 | 53,489,394.85 | 118,684,024.68 | 209,745,947.18 | 284,405,745.54 |
| @= Jofh vr{ | 155,686.20 | 4,041,045.75 | 14,118,900.13 | 31,513,617.94 | 75,928,966.75 | 125,142,185.93 | 179,276,727.04 |
| **Vfb Jofh cfDbfgL** | **140,217.57** | **3,234,716.88** | **10,178,343.96** | **21,975,776.91** | **42,755,057.93** | **84,603,761.25** | **105,129,018.51** |
| #= sldzg tyf l8:sfpG6 | 27,163.47 | 245,855.74 | 549,399.47 | 511,058.10 | 1,138,934.50 | 1,877,132.79 | 2,689,150.91 |
| $= cGo ;+fng cfDbfgL | 416,505.00 | 1,898,423.84 | 5,092,737.83 | 5,665,666.49 | 22,778,690.02 | 37,542,655.78 | 53,783,018.11 |
| %= ;6xL 36a9 cfDbfgL | | - | - | - | - | - | - |
| **Sfn ;+fng cfDbfgL** | **583,886.04** | **5,378,996.46** | **15,820,481.26** | **28,152,501.50** | **66,672,682.46** | **124,023,549.82** | **161,601,187.52** |
| ^= sd{f/L vr{ | 222,174.00 | 1,399,900.81 | 2,528,656.97 | 4,419,582.79 | 9,870,765.68 | 16,268,484.17 | 23,305,974.51 |
| &= cGo ;+fng vr{ | 744,913.60 | 2,127,362.52 | 4,445,956.80 | 7,991,720.87 | 19,112,839.51 | 31,500,791.04 | 45,127,537.73 |
| *= ;6xL 36a9 gf\$;fg | | - | - | - | - | - | - |
| **;Deflj t Gff\$;fgL Joj:yf cl3sf] ;+fng dgfkmf** | **(383,201.56)** | **1,851,733.13** | **8,845,867.49** | **15,741,197.84** | **37,689,077.27** | **76,254,274.61** | **93,167,675.28** |
| (=;Deflj t Gff\$;fgL Joj:yfx? | 211,176.90 | 888,623.16 | 2,331,802.03 | 2,391,649.29 | 4,304,968.72 | 7,748,943.70 | 13,948,098.66 |
| **;+fng dgfkmf** | **(594,378.46)** | **963,109.97** | **6,514,065.46** | **13,349,548.55** | **33,384,108.55** | **68,505,330.91** | **79,219,576.62** |
| !)= u}/ ;+fng cfDbfgL/gf\$;fg | - | - | - | - | - | - | - |
| !!= ;Deflj t gf\$;fgL Aoa:yf af6 lkmtf{ | - | - | - | - | - | - | - |
| **lgoldt sf/f\$f/af6 ePsf]dgfkmf** | **(594,378.46)** | **963,109.97** | **6,514,065.46** | **13,349,548.55** | **33,384,108.55** | **68,505,330.91** | **79,219,576.62** |
| !@= c;fdfGo sf/f]f/x? jf6 ePsf]dgfkmf÷vr{ | - | - | - | - | - | - | - |
| **;Dk0f{sf/f]f/ ;dfj]z kl5sf]vb dgfkmf** | | **963,109.97** | **6,514,065.46** | **13,349,548.55** | **33,384,108.55** | **68,505,330.91** | **79,219,576.62** |
| !# sd{f/L af]g; Aoj:yf | (594,378.46) | 87,555.45 | 592,187.77 | 1,213,595.32 | 3,034,918.96 | 6,227,757.36 | 7,201,779.69 |
| !\$= cfos/ Joj:yf | - | - | 803,743.27 | 3,544,849.11 | 9,104,756.88 | 18,683,272.07 | 21,605,339.08 |
| – o; aif{sf] | - | - | 803,743.27 | 3,947,083.61 | 9,104,756.88 | 18,683,272.07 | 21,605,339.08 |
| – ut aif{;Ddsf] | - | - | - | - | - | - | - |
| – :yug s/ | - | | 969,190.66 | (402,234.50) | - | - | - |
| **vb gfkmf÷gf\$;fg** | **(594,378.46)** | **875,554.52** | **4,148,943.76** | **8,591,104.12** | **21,244,432.71** | **43,594,301.49** | **50,412,457.85** |
| z]o/ ;Vof | 140000 | 420000 | 600000 | 600000 | 1200000 | 2400000 | 2400000 |
| k|t z]o/ cfDbfgL | (4.25) | 2.08 | 6.91 | 14.32 | 17.70 | 18.16 | 21.01 |