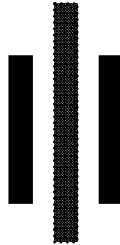
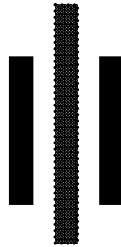


A Study on

**PORTFOLIO ANALYSIS ON INVESTMENT
(WITH REFERENCE TO NEPALESE COMMERCIAL
AND DEVELOPMENT BANKS)**



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**A Thesis Submitted to
Office of Dean
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***In Partial Fulfillment of the Requirements for the Degree in
Master of Business Studies. (M.B.S.)***

**MAKAWANPUR MULTIPLE CAMPUS
HETAUDA, MAKAWANPUR
May 15, 2010**

RECOMMENDATION

This is to certify that the thesis:

Submitted by
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PORTFOLIO ANALYSIS ON INVESTMENT
(WITH REFERENCE TO NEPALESE COMMERCIAL AND
DEVELOPMENT BANKS)**

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**(WITH REFERENCE TO NEPALESE COMMERCIAL AND
DEVELOPMENT BANKS)**

and found the thesis to be an original work of the student and written accordance to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for

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DECLARATION

I hereby declare that the thesis entitled “**A STUDY ON PORTFOLIO ANALYS ON INVESTMENT WITH REFERNCE TO NEPALESE COMMERCIAL AND DEVELOPMENT BANKS**” has been submitted to Makawanpur Multiple Campus, Faculty of Management, T.U., is my own created work report in the form of partial fulfillment of the requirements for the Master's Degree in Business Studies (**MBS**) course under the guidance of respected teachers Mr. Bin Bahadur Raut, Udhdhav Sapkota and Jaya Ram Devkota of Makawanpur Multiple Campus.

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Gita Neupane
Researcher

ABBREVIATOS

ACEDBL	-	Ace Development Bank Limited
B.C.	-	Before Christ
B.S.	-	Bikram Sambat
B/M	-	Book to Market
BOK	-	Bank of Katmandu
C.V.	-	Coefficient of Variation
C/P	-	Cash flow to Price
CMPM	-	Capital Assets Pricing Model
CBs	-	Commercial Banks
CMT	-	Capital Market Theory
d.f.	-	Degree of Freedom
DBs	-	Development Banks
DCBL	-	Development Credit Bank Limited
DPS	-	Dividend per share
E/P	-	Earning to Price
EBL	-	Everest Bank Limited
EPS	-	Earning per Share
F/Y	-	Fiscal Year
HBL	-	Himalayan Bank Limited
HPR	-	Holding period Return
JVB	-	Joint Venture Bank
MBA	-	Master of Business Administration
MBS	-	Master of Business Studies
MPS	-	Market Price per Share
NBB	-	Nepal Bangladesh Bank Limited
NBL	-	NABIL Bank Limited
NDBL	-	Nepal Development Bank Limited
NEPSE	-	Nepal Stock Exchange
NIBL	-	Nepal Investment Bank Limited
NRB	-	Nepal Rasta Bank
OTC	-	Over the Counter
S.D	-	Standard Deviation
SCBNL	-	Standard Chartered Bank Limited
SDR	-	Stock Dividend Ratio
SEBON	-	Securities Board of Nepal
SEC	-	Security Exchange Center
SML	-	Security Market Line
T.U.	-	Tribhuvna University
Var.	-	Variance

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CHAPTER – 1

INTRODUCTION

1.1. Background of the study:-

The economy of the nation depends up on the uses of available resources in efficient way. Due to globalization of economy and market present world economy has more competitive and complicated. Every short of change occurring in one sector of the world affects the other. 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 in the nook and corner of the country. A healthy economy is Development on efficient transfers of funds from people who are not savers to firms and individuals who need capital. Without efficient the economy simply could not function and economic efficiency is simply impossible without a good system for allocating capital within the economy.

Nepal is a landlocked country economically based on agriculture. It occupier on area of 1, 47,181 km² and bounded by India and china. Nepal is one of the least developed countries with about 25 million people but it is very rich in national resources. But the resource is unutilized. The geographical variation has been standing as a challenge for development of the country. About more than 80% people are dependent on agriculture. Traditional agriculture system is used till now. The current situation of Nepalese economy is not satisfactory due to poor infra-structure, unutilized natural resources, miserable agriculture, deficit trade, illiteracy political instability and so forth. Majority of the people are below poverty line. The living standard of the people is very low. Unemployment and conflict are other evil for our economic development. The economic inequality is also great. While the country has been moving toward a market oriented economy since the early 1990, frequent changes in government have hampered the realization of the policy reforms and delayed the implementation of development projects. For the development of the country, also with the political change a revolutionary change has been expected in economic sector too.

For the economic development of any country investment in productive sectors is necessary. This increase the economic activities which finally acceleration economic growth. To increase the economic activities the unutilized financial resources should be diverged toward productive sectors in order to increase the economic activities. Like blood is necessary for human beings, finance is for business organizations and industries. Each and every business organization should base their decision making in financial management. Financial management is manly concerned with the acquisition and utilization of funds. For this financial market plays vita role in utilizing financial resources for expanding productive

sectors in the country. It mobilizes unproductive and unutilized financial resources towards productive sectors and helps in expanding economic growth of the country.

A key factor in the development of a country is the mobilization of domestic resources and their investment portfolio is one such tool that helps for proper utilization of resources. A portfolio means the list of holdings in securities owned by an investor or institution. Portfolio provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified return.

Investment in capital markets collects necessary funds and diverts the collected funds towards the productive sectors. Due to this industrialization is possible. It provides the best investment opportunities by transferring the funds from surplus saving to need-based sectors through the transaction of financial instruments. Financial instruments are traded in the securities market. The stock market is the largest financial market all over the world where stocks of various business organizations are traded. It has the greatest role in the development of the financial system. The capital market consists of

- i) primary market
- ii) Secondary market.
- iii) Over the counter market

I) primary market

Those markets are called primary markets where new securities are usually issued by corporations and governmental bodies. "The financial market in which securities are initially issued is the only market in which the issuer is directly involved is called primary market."² Primary markets denote the market mechanism for the original sale of securities by an issuer to the public. In this market funds transfer from savers to investors; the main function of the primary market is to make financial capital available to make new investment. Investment bankers perform the role of an expert in issuing new securities. These bankers make available advice to the business firms regarding the nature of securities, maturity, and interest rate and underwrite the issue of securities.

ii) Secondary market.

Secondary market is the marketing of securities that have been issued at some previous point of time. In other words, this is the market where existing securities which are already traded between investors. First, the securities are issued into the primary market, then they are traded in the secondary market. It is the

² Lawrence. J. Gitman. Principle of Management Finance, 4th ed. (New York: Harper and Row Inc. 1985)p.33

market that creates the price and allows for liquidity. The main function of secondary market is to provide liquidity on security. The corporation needs to list their shares in any organized securities exchanges to qualify for the trading. Due to more liquidity on secondary market, investors are encouraged to invest in primary market.

iii) Over the counter market

Additionally over the counter market is help to the capital market. It is not formal organized stock exchange. Over the counter market neither requires membership for trading nor listing of securities. Securities which are not listed and which are de-listed can't be traded in stock exchange because of not meeting of the requirements for trading. They are traded in over the counter market. Price quotation in the OTC market exists through competitive price pouted by the securities dealer. In Nepal OTC market has just started and volume of securities traded in this market is very thin.

Development requires economic growth. Economics growth occurs when people and their government respond to economic incentives. Development also takes hold when good governance is found with a dynamic private sector. Private sector gives free reign to human creativity, fostering innovation and improving the living standard of every people³. Increased economic growth and individual prosperity through economic freedom must be the core goals of development. Open market and economic liberalization provide the faster and most reliable path to increase growth and prosperity. With the world wide move towards open and market oriented economic system, it has led to growth and expansion of banking and financial systems too. Both sectors play the role for the overall development of the nation.

1.1.1. Constituent of capital Market in Nepal:-

Nepalese capital market began when Biratnagar Jut Mills Ltd. And Nepal Bank Limited floated their equity shares to the general public in 1937. Capital markets are the introduction of company Act in 1964. The first issuance of government Bond in 1964 and the establishment of securities exchange centre Ltd in 1976.

Security Board Nepal was also established in 1982, which was another step toward the capital market development. It was established with the objective of promoting and protecting the interest of investor by regulating the securities market. Its main objective was to regulate and monitor the functions of the security exchange center. Security Board (SEBO) has been working as an apex regulatory body to facilitate the orderly development of a dynamic and competitive capital market and

³ Us Department of State, Economic Prospective Vol. 8, Number 2, (Washington DC: Us Department of State March 2003)

has attempted to maintain its credibility, by making securities transactions fair, healthy, efficient and responsible.

The government was the sole issuing authority development bonds and national saving certificates when the security market was not development in Nepal. In time, only the government securities were traded in the market. Nepal Rastra Bank as central Bank is responsible to mobilize resource on behalf of the government to finance development activities and manage public's debt under public debt act. NRB has been managing the issue of short term treasury bills and various types of development bonds to collect public debt for the development works from time to time. Ninety one days treasury bills of Rs.7 million were issued for the first time during June\ July 1962. The government issued 6% Development bonds of Rs.13.1 million with a maturity period of five years for the first time on 12 February 1964. In 1965, 3% compensation bonds with a maturity period of 10 years were issued for the acquisition of Brita Land and 1% Compensation bonds with a maturity of 20 years were issued for the acquisition of private forests. Non-interest bearing prize Bond of 8.61 million was also issued to general public in 1969. NRB makes arrangement for the issue, register, purchase and sale, transfer of ownership and redemption of government bonds and debentures. These securities are traded under the sole management and supervision of NRB.

Securities exchange center (SEC) was established in 1976 under the company act. It was established with the objective of face-lifting and promoting the growth of capital market institution undertaking the job of brokering, underwriting, managing public issue, market making of government bonds and other financial services.

After the introduction of Liberalized economic policy and the restoration of multiparty democracy in Nepal, the government converted securities Exchange center (SEC) into Nepal stock Exchange Ltd. (NEPSE) in 1993 under the provision of securities exchange Act. 1983.

Primary Market:-

Before the establishment of the securities stock Exchange center (SEC), there was no institutional arrangement to undertake new issue and manage the sale of shares and debenture of corporate bodies. A public limited company could make public offering according to the provision of the company Act, 1964. It started managing new issue of shares and debenture according to the guidelines for new issues and sales management, 1986

Secondary Market:-

The Public Limited companies had to list their securities in SEC to qualify for trading. But the government bonds issued under the such compulsory obligation securities Exchange Act 1983 made it Obligatory to trade the securities through the recognized exchange center or their Licensed brokers. As a result, the SEC opened its floor for secondary trading of corporate shares in 1984 .

Over the counter market:-

Over the counter market is new concept in Nepalese share market. Nepal security Board provided permission for operation of OTC market for Nepal stock exchange at B.S. 2065 Jestha 14. NEPSE started its work through B.S. 2065 Jestha 22 opening separate counter. Other than regular activities now, shareholders of 38 de-listed and 2 not listed companies can take advantage through OTC.

After the formation of SEBO and conversion of SEC into NEPSE, brokers and market maker operate on the trading floor as per the securities Exchange ACT, Rules and Byelaws of NEPSE. NEPSE began its trading operation as a secondary market on 13Jjanuray 1994 through its licensed member. Now, the crying system on trading is development as computerized system science August 2007. It makes easy to trade securities and gain the information for investor and make easy for NEPSE and its broker to perform their work. Currently it has 23 Member brokers operating on its trading floor and additional broker selecting process is running altogether 166 companies have listed their shares to make them eligible for trading in the secondary market.

1.1.1 Commercial Banks

Commercial banks are those banks, which accept deposits from the public and provide same deposit to the public, business enterprises, industries etc as loan and advices. In fact, commercial banks circulate the many and create credit. According to G. Crowther," A bank is an institution which collects money from those who have it space or which collects money from those who requires it. It is established by law. So it's a legal entity. Crowther has described that the merchants, money lenders and goldsmiths and the ancestor of mordent bank.

According to the Black's Law Dictionary, "Commercial bank means a bank means authorized to receive both demand and time deposits, to engage in trust services to issue letter of credit, to rent time deposits boxes and to provide similar services."

Commercial bank means a bank, which operates currency exchange transactions, accepts deposits, provides loan, performs decaling relating of

commerce except the banks which have less specified for the co-operative, agriculture, industry or other similar specific objectives.

1.1.2 History of commercial Bank in Nepal

The specific date of beginning of money and banking transaction in Nepal is unknown. The banking functions were carried out in unorganized sectors' It is found that minted coins; copper coins; silver coins and gold coins were introduced by different kings.

Institutional development of modern banking in Nepal had begun from early 1990s. With the establishment of Nepal Bank Limited in 1994BS the new era of banking sector had started in Nepal Rastra Bank was established in 2013BS under the provision of Nepal Act 2012'With the objectives of helping in the developing of monetary and financial sector by undertaking various.

Another step was added when Rastriya Baniya Bank was established in 1966 (2022)BS under the Baniya Act 1965 (2021)BS Likewise; Agriculture Development Bank was established in 1965 (2024)BS under the agriculture Development Bank Act 1968 (2024)BS with the objective of increasing the life standard of those people who are involved in agriculture.

The banks opened before the decade of 1980s were by the government. No private sector was permitted to open banks in Nepal. The process of development of banking was not so satisfactory. In the early 1980s; the government adopted liberalized economic policies to develop the financial sector. As a pre-condition to economic liberalization; the foreign Investment and Technology Transfer Act 1981 come in to existence. The government allowed private sectors to open banks joint venture projects were also allow. Many joint venture commercial banks and financial institution were established. As a result, Nepal Arab Bank Limited was established as a first joint venture commercial bank in 1985 under the provision of commercial Bank Act, 1974 and company Act 1965. Then, Nepal Indosuez Bank Limited was established in 1985 and Nepal Grindlays Bank Limited in 1986. In 2001, the name of Nepal Grindlays Bank Limited has been changed into standard Chartered Bank Nepal Limited and Nepal Indosuez Bank Limited has been changed into Nepal Investment Bank in 2002, which has not foreign share now. After the restoration of multiparty democracy, the newly formed government adopted liberalized policies aimed at accelerating economic growth and considerably reducing state interference in business. The government encouraged foreign and private investment by offering attractive incentives and facilities including 100% foreign ownership in all but sectors. This help to create conducive business environment for banking, As a result, additional

commercial banks came into existence. When the internal violence shows green signal to manage and Nepal Rastra Bank make ease for rules and regulations, many new commercial banks are coming existing development banks and financial institutions are upgrading them as commercial banks. At present, there are 26 Commercial banks registered and operated in Nepal up to 2066, Chaitra (Including Development and credit Bank Ltd. Upgraded in commercial bank) (see Annex-I).

1.1.2.2 Functions of Commercial Banks

The main function of commercial banks include:(i) accepting deposits in the forms of current, saving and fixed deposits, (ii) providing short, medium and long term loans, (iii) acting as an agency in transfer of money, make payment on commission basis for the cheque, draft, bill of exchange etc. presented by the customer, (iv) buying and selling shares and debentures of any company and government bonds, (v) collecting interest on debenture and government bonds, dividend on shares and fund from other banks for its customers, (vi) making payment on insurance premium, rent, income tax, school fees, telephone bills to the concerned offices on (viii) helping in foreign trade.

Moreover, other functions include:

- To protect precious jewelleries.
- To provide travelers cheque.
- To facilitate in financial policy formulation by gathering and providing trading and monetary transaction related information.
- To underwrite the debentures.
- To accept the bill of exchanges.
- To provide advice to customers, entrepreneurs, and businessmen on economic matter.
- To create credit on the specific basis and expand credit.
- To issue credit card, debit card, master card, visa card etc.

1.1.3 Development Banks

Development banks means the banks that are established to mobilize skill, labor and capital for the development of a special sector of the economy, such as agriculture, industry, trade etc. After the development of central and commercial banks, the concept of development bank was stated. Mainly development banks works in these sector where commercial banks are not available or which needs special attention. Development banks not only provide financial assistance but also extend the technical services to their customers. The concept of development banks in Nepal is developed though the establishment of agricultural development bank in 2024 B.S.

“Development bank’s aim is not earn profit. Development banks are of two types. The first development banks finances loans to farmers loans and other agricultural sectors for short, medium and term purpose. The second development banks finances loans in the infrastructure development in a country.⁴

1.3.1 History of Development Banks in Nepal

The first development banks in Nepalese banking system in Nepali Industrial Development Corporation (NIDC). Through NIDC does not have word ‘bank’ in its name but its objectives and function in the economy NIDC was established with the objective of providing long term loan to the needy industry in 2016 B.S. (1959AD). After NIDC, agricultural development bank was establishment in 2024 B.S. Then, different rural development banks were establishment by the effects of different government agencies. Different regional rural development banks were previously established under the provision of the Commercial Bank Act, 2031 and later their status was change by the development bank Act, 2052 as development banks. After liberalization, many new development banks came into existence. The different banks which were previously established as development banks have changes their status. The agricultural development bank received the license of class A that is available for commercial banks and other different development banks are also upgrading them as commercial banks. There are 58 development banks operating in different sector and different geographical region of Nepal up to Chaitra 2066 (see Annex- II)

1.1.3.2 Function of Development Banks

Without stating the word development bank in its provision the BIF Act, 2063 makes provision for the class B license to the banking companies which were makes prevision involved in the development banking or want to be involved in the development banking. The section 47(2) determines the following function for such banking companies;⁵

Subject to this Act and its memorandum and articles of association, a class B licensed institution may conduct the following types of financial transactions:

- a. Accept deposits with or without interest, and refund such deposits, subject to the limit prescribed by the Rastra Bank.
- b. Supply credits other than hypothecation credit as prescribed.

⁴ Shakespeare Vaidya, Banking and Insurance: Management 3rd edition, (Bhotahity, Kathmandu, Talaju Publication 2001) P/33

⁵ Banking low of Nepal, Resham Raj Regmi, Exhibition Roads, Kathmandu 2064, P.33

- c. Deal in foreign exchange subject to current law and the directions of the Rastra Bank.
- d. Supply credits for hire-purchase, leasing, housing and service enterprises.
- e. Engage in merchant banking business subject to the directives of the Rastra Bank.
- f. Supply or arrange for joining supplying credit on the basis of co-financing by joining hands with other licensed institutions according to the agreement conducted for the purpose so as to dividend the collateral *pari passu*.
- g. Supply credit against the guarantee provided by any local bank or financial institution.
- h. Issue guarantees on behalf of its customers, have such customers execute necessary bonds in consideration thereof, obtain security, and acquire their moveable or immovable assets as collateral or on mortgage of the assets of third individual as collateral.
- i. Issue, accept, pay, discount, or deal in bills of exchange, promissory notes, herubs, traveler's cheques, drafts or hundis.
- j. Accept deposits, make payments and supply credits through automated teller machines and cash dispensing.
- k. Grant overdraft to persons trusted by it.
- l. Obtain credits by pledging its movable or immovable assets as collateral.
- m. Supply a fresh credit in a lump sum or in installment against the security of the same movable or immovable assets which have already been pledged with it or with any other licensed institution, to the extent covered by the total value of such security.
- n. Issue and accept letters of credit subject to the conditions prescribed by the Rasta Bank.
- o. Remit or transmit fund to different Pleases within the territory of Nepal through bills of exchange, cheques or other financial instruments, deal in shares, debentures, bonds, etc. and collect dividends accruing on shares, and interest on promissory notes, debentures, bonds, etc.
- p. Act as a commission agent of its customers, take custody of and arrange for the sale or purchase of shares, debentures or securities, and collect interests, dividends, profits, etc. accruing from shares, debentures, bonds, etc.
- q. Issue guarantees on behalf of its customers, have such customers execute necessary bonds in consideration thereof, bonds security and acquire their movable or immovable assets as collateral or on mortgage or the assets of third individual as collateral.

- r. Purchase, sell or accept loan-bonds issued by the government of Nepal or the Rastra Bank.
- s. Arrange for safe deposit vaults.
- t. Undertake off-balance sheet transactions subject to the conditions prescribed by the Rastra Banks.
- u. Supply credits not exceeding the amount prescribed by the Rastra Bank to ensure the economics upliftment of the destitute class, low-income families, and victims of natural calculations and inhabitants of any area of the country with the provision of invidual or collective guarantee.
- v. Exchange with the Rastra Bank or any other licensed institution particulars, information or notices regarding debtors or customers who have obtained creditors from it or any other licensed institution.
- w. Provide guarantee to arrange for the supply of credit to its customers by any other licensed institution.
- x. Mobilize capital through shares, debentures, bonds loan-bonds, saving-bonds, or other financial institutions subject to the limit prescribed by the Rastra Bank.
- y. Obtain refinance credit from the Rastra Bank according to need, or obtain or supply creditors to or form other licensed institutions.
- z. Supply fund received from the government of Nepal or other local or foreign agencies as credit for the promotion of projects, or manage such credits.
- aa. Conduct or arrange for conducting studies, research and surveys relating to the establishment, operation and evaluation of projects, and impart trading and provide consultancy and other information.
- bb. Write off credit subject to the bye-rules farmed by the board.
- cc. Prescribe conditions according to need in order to project is interests while supplying credits to or carrying out any transaction with any individual or institution.
- dd. Supply installment or hire-purchase credit to any individual, firm, company or institution for vehicles, machinery, tools, equipment, durable household goods or similar other movable property.
- ee. Operate projects such as those relating to purchase of land and construction of building for land development and residential purpose, and sell or manage such land and buildings, or make arrangements for doing so.
- ff. Perform such other function as are prescribed by the Rastra Bank.

In addition to giving detailed list of business which a banking company having class B license can do, this Act gives authority to NRB as a central

bank to prescribe the other necessary functions which a development banks can do as per need of the hour. There is no negative list included for the development banks in the Act but it does not mean that the development banks can be involved in the non banking business. NRB is authorized to make limitation of function to any banking companies.

1.1.4 Portfolio Risk and Return

Investment is made with the goal of earning some expected rate of return. Investors seek to minimize inefficient deviations, from this expected rate of return. To minimize inefficient deviations, diversification is essential to the creation of an efficient investment as it can reduce variability of returns around the expected return.

Diversification means dividing available assets across a number of different securities. The key to diversification across the securities, Portfolio theory suggests creating a well-diversified investment portfolio that has the maximum return at whatever level of risk the investor deems appropriate. Harry M. Markowitz originally proposed portfolio theory. Professor of Finance Harry M. Markowitz began a revolution by suggesting that the value of a security to an investor might best be evaluated by its mean return, its standard deviation (risk), and correlation to other securities in the portfolio.

Diversification is important for every investor. In fact, it is so important that Harry Markowitz won the Nobel Prize of 1990 largely for his work on diversification. He developed a theory of diversification. This is also called "modern theory of portfolio management."

Markowitz diversification based on the correlation. Under this theory if portfolio is made with combining assets which are less than perfectly positive correlated (+1), the reeducation in risk is possible without sacrificing portfolio return. The lower the correlation between assets, if the asset are perfectly negative correlated (-1), the risk –less portfolio is but it is rare in practical life.

Many portfolios can be made through our limited fund but our preface goes to select portfolio having higher level of return at given level of risk. Therefore trade off is required between risk and return of portfolio. To select the efficient portfolio we need first to calculate expected return and risk of the portfolio.

The essence of portfolio theory can be simply stated. The two characteristics of interest are the expected return from the portfolio, the whole (the risk

characteristics of the portfolio) is unequal to the sum of the parts (the risk characteristics of the individual assets).

Expected Portfolio Return

The expected portfolio return is the simple weighted average the expected return from the investment represented by a portfolio. This expected return is calculated by determining the expected return of each component of the portfolio and using these returns to compute a weighted average. The weights used are the portfolio weights, which describe how the portfolio's investment is weighted among the various assets/securities. Portfolio weights are percentage of the total amount available to be invested in the portfolio and sum to 1. The expected return of a portfolio $E(R_p)$ is calculated as:

$$\text{Expected Portfolio Return} = E(R_p) = \sum_{j=1}^n X_j E(R_j)$$

Where,

$E(R_p)$ = the expected return on the portfolio

$E(R_j)$ = the expected return of asset J

X_j = the portfolio weight for asset J, where $\sum W_j = 1.0$

Portfolio Risk

The portfolio risk is measured by the variance of the portfolio's rate of return distribution. The portfolio risk depends on the risk of the individual securities and the covariance between the return of the individual securities. The risk (variance of returns) from a portfolio made up of n assets is defined as:

$$\text{Portfolio Risk} = \text{var}(R_p) = \sum_{j=1}^n \sum_{i=1}^n w_i w_j \rho_{ij} \sigma_i \sigma_j$$

OR

$$\sqrt{[X_i^2 \sigma_i^2 + 2 X_i X_j \rho_{ij} \sigma_i \sigma_j + X_j^2 \sigma_j^2]} \text{ for two assets portfolio}$$

Where,

X_i = Proportion of investment in security i

X_j = Proportion of investment in security j

ρ_{ij} = Correlation coefficient between i and j securities

σ_i = Standard deviation of security i

σ_j = Standard deviation of security j

1.1.5 Portfolio Management

Portfolio management is concerned with efficient management of portfolio investment in financial assets, including shares and debentures of companies. The management may be by professionals, by other or by individual themselves. A portfolio of an individual or corporate unit is the holding of securities and investment in financial assets. These holding rate are the results of individual preferences and decisions regarding risk and return.

“Portfolio management is the art of handing a pool of funds so that it not only preserves its original worth but also over time appreciates in value and yields an adequate return consistent with the level of risk assumed.”

The objective of portfolio management is to analyze different individual assets and delineate efficient portfolios. Specially, portfolio management will have the following objectives:-

- ⇒ Safety or security of investment through diversification
- ⇒ Risk avoidance or minimization of risk
- ⇒ Income through dividends and interests
- ⇒ Marketability of investment
- ⇒ Liquidity of investment
- ⇒ Tax planning-capital gain

1.2 Focus of the study

Investors always invest their money with the hope of getting good or pretty return on their inevitable funds. All the investors who invest their funds are not rational investors so they invest their life time earning in the securities without analyzing different indicators but only by reading melodious slogans. So the study is concentrated to find out portfolio alternative on the empirical study of those stocks trading at NEPSE, which is secondary market in Nepal.

The focus of the study is portfolio analysis on investment of selected commercial banks and development bank in Nepalese context. This study is designed to explain minimized risk and maximized return by portfolio management and existing situation of portfolio management of commercial bank and development bank in Nepal and to measure their risk return trend and portfolio patterned. This study also focuses on the market volatility of those stokes. It is also focused on how an investor manages his/ her inevitable fund in order to maximize their return and reduced risks. Whether, he/she has

adopted appropriate diversification into practice or not in another aspect of the study.

1.3 Statement of the Problem

The investment process is concerned with how an investor should go about making decision with regard to what marketable securities to invest in how extensive the investment should be and when the investment should be make.

Most of the Nepalese investors invest their fund in non-productive sector like land building and jewelries. They deposit their fund in bank for nominal interest rate. Due to this investors seem to invest their money in stock market even though it is new concept in Nepal. There is single stock market i.e. NEPSE. There is no investment analyst rendering professional services to investors except few cases. Investors do not use the related information during investing their fund. Most of the investors are claiming that the financial institution, intermediaries and brokers. Nepalese investors make the profit. Many factors affect value of stock directly or indirectly. Risk associated with return is not analyzed investors before making investment. Whether the stock price of Nepalese commercial and development banks are correctly priced or not, is another aspect of the study. The stock market is facing many difficulties even investors too. Most of the investors are misadvised by brokers. They only observe market price when making investment. They don't analyze risk associated with return. Prime market is seemed more affective than that of secondary market.

Most of the Nepalese investors are not professions investors. They don't analyze the performance and information regarding the companies. They invest when the price of securities in NEPSE is getting rise and draw it hurriedly when it is getting down They don't use the technique of portfolio investment. They have only seen or listen how much money have someone made by investing in securities and they follow them. Only few investors analyze the securities before buying or purchasing them.

This study is expected to answer the following research question:

- How risk and return are related each other?
- Whether the stock is overpriced or under priced?
- Which is the best portfolio for investment?
- How the returns are correlated with each other?
- Whether the investor analysis the risk and return or not?
- What type of diversification strategies are Nepalese investors adopting?

These are the key issues in investment decisions of investors. Hence, this study will try to deal with those problems in terms of risk and return characteristics and portfolio concepts.

1.4 Objectives of study

The general objective of this research is to identify the current situation of analyze the portfolio on investment with reference to listed commercial banks and development banks in Nepal. However, the specific objectives are as follows:

1. To analyze the return and risk of securities of listed commercial and development bank.
2. To determine the price of share of commercial banks and development banks correctly priced or not.
3. To analyze the portfolio return and risk of the listed commercial banks and development banks.
4. To provide suggestions and make necessary recommendations on the basis of major findings.

1.5 Significance of study

First of all, it is the fact that study is undertaken to apply the theoretical concepts and knowledge of Financial Management to the practical aspects as a partial fulfillment of the requirement of Master of Business Studies (MBS) under faculty of Management, Tribhuvan University.

Moreover, investment practices under the organized stock exchange are heading progressively in Nepal. Some studies and researching have been undertaken regarding the stock market. Since we are moving towards the free and open market economy, such studies have become more significant. Due to growing number of investors, such type of study helps them to make rational investment decision. Hence, this study assess the risk and return characteristics of the stocks to make them eligible for trading in primary as well as secondary market. Hence, this study is s additional brick of continuous research process.

The main significance of the study is:-

1. This study may be importance to diversify the risk with the help of optimum portfolio selection.
2. This study will provide a guideline for a rational investor
3. It will be valuable property for the library use
4. The study will be used as a pilot work for the future research
5. It will be helpful to NEPSE; Commercial Banks, and development banks.

1.6 Limitation of the study

Each study is conducted under some constraints and limitations; basically the study is done for the partial fulfillment of Masters of Business studies. Time constraints, financial problem and lack of research experience will be the primary limitation. Likewise, this study is also limited by some common constraints. This study is based on the fundamental analysis of the common stocks of the selected commercial and development which have issued their shares to general public and listed their shares in Nepal stock exchange Limited to make them eligible for trading.

However, the specific limitations of the study are as follows.

- This study has covered only three commercial banks and three development banks.
- This study is based on secondary data which have been collected from books, financial statement, Nepal Stock Exchange and selected company's annual reports, company's web site and other publications.
- Data of the stock of the respective Commercial and Development banks traded in NEPSE with in the last 5 year (2005 – 2009) are only considered.
- When analyzing portfolio risk and return, only six listed companies are considered from two sectors and three from each sector.
- The Ace development bank is taken as sample from the sector of development bank. It was operating as financial company, now it has changed into development bank.
- This study is affected by financial resources of the student. Time and work forces are also the limiting factors in undertaking this study.

1.7 Scheme of the Study

This study has been organized to five chapters. They following:-

1. Introduction
2. Review of literature
3. Research methodology
4. Presentation and analysis of data
5. Summary, conclusion and recommendation.

⇒ The first chapter contains the introduction part of the study. It gives some earlier history of concern title and some related term as will. It present systematically of objective of the research, problem of the study, signification of the study and limitation of the study.

- ⇒ The second chapter is review of literature, which present some principles. Theoretical aspects, some pilot studies had been made under some report, journals and some relevant studies on the topics of this thesis.
- ⇒ Similarly, the third chapter explains the research methodology including research design, nature and resource of data, period covered of research and review of literature.
- ⇒ The fourth chapter presents analysis and interpretation data. It particularly concentrated to trace out the fact by the given data through the secondary data.
- ⇒ The fifth chapter concerns summary, findings and suggestion for future improvement of corporation.

CHAPTER-II

REVIEW OF LITERATURE

This chapter consists of two parts in which first reviews the concepts regarding the subject matter written on the text book and secondly reviews the previous studies related to the subject matter of the study. Review of literature is the study of past research studies and relevant materials. It is an advancement of existing knowledge and comprehensive study of subject matter. It starts with search of a suitable topic and continues throughout volumes of similar or related subjects.

The primary concern of this study is to focus on portfolio management theories; diversification and asset allocation concepts and risk return characteristics of the common stocks theoretical aspects of return and risk and explained in this chapter. Furthermore some books and journals related to financial management and other related studies have been reviewed. In Nepal, independent researches have not yet been reviewed.

2.1 Conceptual / Theoretical Reviewed

Conceptual and theoretical review deals with the theoretical aspects of investment, return, risk, portfolio, diversification etc. various book articles, research papers etc are reviewed under this

2.1.1 Investment

Investment simply can be defined as mobilization of funds to generate additional funds in future. It involves sacrifice of current resources in anticipation of some benefits will grow in future. Investment generally involves real assets and financial assets. Real assets involves some kinds of tangible assets such as machinery, building land automobile etc. real assets are considered to be less liquid than financial assets. Investment is the employment of funds with the objective of achieving additional income growth in value.

"Investment in its broadest sense means the sacrifice of current dollars for future dollars. Two different attributes are generally involved: time and risk. The sacrifice takes place in present and is certain. The reward comes later, if at all, and the magnitude is generally uncertain."⁷

⁷ Francis, op cit, p

Investment Process:⁸

The investment process describes how an investor should go about making decisions with regard to what marketable securities to invest in, how extensive the investment should be, and when the investment should be made. The formal investment process includes:

- 1. Set investment Policy:** It involves determining the investor's objectives and amount of his or her invest-able wealth. Investment objective should be stated in terms of both risk and return.
- 2. Perform Securities Analysis:** It involves examining several individual securities or group of securities within the broad categories of financial assets previously identified.
- 3. Construct a Portfolio:** The third step in the investment process, portfolio construction, involves identifying those specific assets in which to invest, as well as determining the proportions of the investor's wealth to put into each one. Here the issues of selectivity, timing and diversification need to be addressed by the investor.
- 4. Revise the Portfolio:** Portfolio revision concerns with the periodic repetition of previous three steps. That is, overtime the investor may change his or her investment objectives, which in turn may cause the currently held portfolio to be less than optimal.
- 5. Evaluate the performance of the portfolio:** It involves determining periodically how the portfolio performed, in terms not only the return earned but also the risk experienced by the investor.

2.1.2 Common Stock

"Common stock represents equity or an ownership position in a corporation. It is a residual claim, in the sense that creditors and preference share holders must be paid as scheduled before common stock holders can receive any payments. In bankruptcy, common stock holders are in the principal entitled only to any value remaining after all other claimants have been satisfied".

Common stock holders are entitled certain rights, which are as follows.

- Control through voting rights
- Primitive right
- Residual right
- Limited liability
- Right to income and distribution of additional shares

⁸ Sharpe et al, op cit, pp 11-14

Common Stock Values

Common stock values are either denoted by par value, book value or market value. These three terms are different and their rupee amount differs.

Par Value: The face value of one stock established at the time the stock is initially issued is known as par value. The par value of the common stock remains unchanged unless and until the stock split or reverse split exists. Generally common stocks carry Rs.100 par value.

Book Value: The sum of the cumulative retained earnings and other entries such as common stock and capital contribution in excess of par value under stock holder's equity is the book value of the equity.

Book Value of Equity = Cumulative Retained Earnings + Capital Contributed in excess of par + Common Stock.

The book value per share is obtained by dividing the book value of the equity by the number of shares outstanding. If higher the profit, higher the book value.

Market Value: The value of share in the secondary market traded between investors and traders in the market. Market value is the consequence of demand and supply. It is influenced by various factors such as economic and industrial conditions, expected earnings and dividends and market and company risk considerations.

2.1.2.1 Return on Common Stock

Single Period Measure Return

The investment return is defined as the after tax increase in the value of the initial investment. The increase in value can come from two sources: a direct cash payment to investor or an increase in the market value of the investment relative to the original purchase price. The rate of return over the holding period, or holding period return (HPR) is computed as:

$$\text{HPR} = \frac{\text{Ending Price} - \text{Beginning Price} + \text{Cash Receipts}}{\text{Beginning Price}}$$

The holding period returns are often calculated for periods other than one year, for this reason, the length of the holding period must always be indicated for specific HPR. Many HPRs over periods shorter or longer than one year are annualized. In general, if the length of the holding is not specified, it is assumed to be one year.

Annualized Holding Period Returns

"Holding period returns measure mentioned above is useful with an investment horizon of one year or less. For longer periods, it is better to calculate rate of return as an investment yield. The yield calculation is present value based and this considers the time value of money."⁹

HPRs are reported as an annual equivalent. One possible measure of annualized HPR might be the average of several HPRs such as:

$$\overline{HPR} = \frac{\sum_{t=1}^r (HPR)}{n}$$

However, the simple arithmetic averaging ignores the compounding effect that results if first period's return is reinvested. In addition, the result of an arithmetic average return can be distorted if there are large differences in the rate of returns across time periods. Large differences in the periodic rates of return over longer investment horizons will cause the arithmetic rate of return to be misleading.

The geometric mean rate of return does not suffer from this flaw. The geometric mean rate of return, \overline{HPR}_g is defined as the rate of return that would make the initial investment equal to the ending investment value. Annualized rate of return is calculated as:

$$\text{Annual rate of return (R)} = (1 + \text{HPE})^{1/n} - 1$$

Required Rate of Return

"When setting the required rate of return on an investment, an investor must consider the real rate of return, expected inflation and risk. Because consumption is foregone today, the investor is entitled to a rate of return that compensates for this deferred consumption. Since the investor expects to receive an increase in real goods purchased later, and assuming for the

⁹ James C. Van Horn and Jr. John M. Wachowicz Fundamentals of financial management. Ninth Edition. (USA: Prentice Hall Inc., P.90)

moment, zero inflation and risk, the required rate could equal the real rate of return, in which case it would represent the pure time value of money. The capital market determines this rate based upon the supply of money to be invested relative to the demand for borrowed money."¹⁰

The required rate of return is the minimum rate of return that an investor expects from his/her investment in risky assets. It is the function of real rate of return and risk. The required rate of return is the return on risk free assets i.e. government securities plus risk premium. It is determined by CAPM/SML.

The required rate of return using CAPM/SML IS:

$$\text{Required rate of return, (K)} = R_f + (R_m - R_f)\beta$$

Expected Rate of Return

If an investment is to be made, the expected rate of return or expected holding period return should be equal or greater than the required rate of return for that investment. The expected rate of return is based upon the expected cash receipts. (e.g. dividends or interest) over the holding period and expected ending or selling price. The expected rate of return is an ax-ante or unknown future return.

If the investor can describe the possible variables that will influence each of the possible rates of return and assign probabilities to these outcomes, the expected rate of return should equal the weighted average of the probabilities. Listing the possible investment results and assigning probabilities to each of these outcomes is the same as creating a probability distribution in statistics. Probability distributions are used to describe possible outcomes and to assign individual probabilities, from zero (no chance of occurring) to one (full certainty that the outcome will happen), to each possible outcome.

The investor has forecast possible outcomes, each based upon a possible state of economy. Each economic state will result in a different expected rate of return. Subjective probabilities are assigned to each outcome. The overall expected rate of return, E(HPR) can be calculated as a weighted average of the three forecasts.

$$E(\text{HPR}) = \sum_{j=1}^n P_j \times \text{HPR}_j$$

¹⁰ John M. Cheney & Edward A. Moses. Fundamentals of Investment. 5th Edition. (New York: West Publishing Company, 1995) P.33

2.1.2.2 Risk on Common Stock

Different people interpret uncertainties and risks in different ways. It is simply lack of definite outcome or chance of losing something due to presence of some unfavorable conditions. However, risk is the product of uncertainty. Although risk arises from uncertainty, its magnitude depends upon the degree of variability in uncertain cash flow and it is measured in terms of standard deviation.

"In a world of uncertainty, expected return may not be realized. Risk can be thought of as the possibility that the actual return from holding a security will deviate from the expected return. The greater the magnitude of deviation and greater the probability of its occurrence, the greater is said to be the risk of the security."¹¹

Financial analysts and statisticians prefer to use a quantitative risk surrogate called the variance of return, denoted by $\text{var}(r)$. The variance of asset's rates of return equals the sum of the products of the squared deviations of each possible rate of return from the expected rate of return multiplied by the probability that the rate of return occurs.¹²

$$\begin{aligned}\text{Var}(r) &= \sum_{t=1}^T P_t [r_t - E(r_t)]^2 \\ &= P_1 [r_1 - E(r_1)]^2 + P_2 [r_2 - E(r_2)]^2 + \dots + P_T [R_T - E(R_T)]^2\end{aligned}$$

The square root of the variance of the rates of return is called the standard deviation (σ) = $\sqrt{\text{Var}(r)}$

The standard deviation and the variance are equally acceptable and conceptually equivalent quantitative measures of an asset's total risk.

Source of investment risk

Every investment involves uncertainties that make future investment returns risky. The sources of uncertainty that contribute to investment risk are:

- i. **Interest rate risk:** It is defined as the potential variability of returns caused by changes in the market interest rates. If market interest rate rises or falls, then the investment's present value will fall or rise. Present value moves inversely with changes in the market rate of interest. The interest

¹¹ James C van Horne, Financial Management and Policy.(New Delhi: Prentice Hall of India Pvt. Ltd. 2000) P.35

¹² Francis op. cit. pp.12-13

rate risk affects the prices of bonds, stocks, real estate, gold, puts, calls, future contracts, and other investments as well.

- ii. **Purchasing Power Risk:** It is the variability of return an investor suffers because of inflation. Economics measures the rate of inflation by using a price index. The percentage change in the consumer price index is a widely followed measure of the inflation.
- iii. **Bull-Bear Market Risk:** It arises from the variability in market returns resulting from alternating bull and bear market forces.

When a security index rises fairly consistently from 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 trough is called a bear market. Bull market that usually rise more than enough to compensate for the bear market losses follow bear market. But the alternating bull and bear market forces create a potential source of investment risk.

- iv. **Management Risk:** Errors made by business managers can harm those who involve in their firms. Forecasting management errors is difficult work that may not be worth the effort and, as a result, imports a needlessly skeptical outlook. **Agency theory** provides investor with an opportunity to replace skepticism with informed insight as they endeavor to analyze subjective management risks.
- v. **Default Risk:** Default risk is that portion of an investment's total risk that results from changes in the financial integrity of the investment. The variability of return that investors experience as a result of changes in the creditworthiness of a firm in which they invested is their default risk.
- vi. **Liquidity Risk:** Liquidity risk is that portion of an asset's total variability of return which results from price discounts given or sales commission paid in order to sell the assets without delay.
- vii. **Call ability Risk:** Some bonds and preferred stocks are issued with a call provision. Issue like the call provision because it allows them to buy back outstanding preferred stocks and or bonds with the funds from a new issue if market interest rates drop below the level being paid on the outstanding securities. But, whatever the issuing company gained by calling in on issue is gained at the expense of the investors who have their securities called. That portion of a security's total variability of returns that derives from the possibility that the issue may be called is the **Call ability Risk**. Call ability risk commands a risk premium that comes in the form of slightly higher average rate of return. This additional return should increase as the risk that the issue would be called increase.
- viii. **Convertibility Risk:** Conversion is a contractual stipulation that is included in the term of original issue. This provision alters the variability of returns from the security.

Convertible bond or preferred stock that deflects the possibility that the investment may be converted into the issuer's common stock at a time or under terms harmful to the investor's best interests.

- ix. **Political Risk:** Political Risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the effects of various to improve their relative position increasing the variability of return from the affected asset regardless of whether the charges that causes political risk are sought by political or by economic interests, the resulting variability of return is called political risk it if is accomplished through legislative, judicial or administrative branches of the government. Political risk can be international as well as domestic.
- x. **Industry Risk:** Industry Risk is that portion of an investment's total variability of return caused by events that affects the products and firm that make up an industry. The stage of the industry's life cycle, international tariffs and or quotas on the products produced by an industry, product or industry related taxes; industry wise labor 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 commodities, the prices of the securities issued by competing firms tend to rise and fall together.

The above mentioned uncertainties are the major source of investment. Moreover, there might be numerous minor sources of investment risk. The above said major sources are of additive nature which add up to total risk i.e. variance.

2.1.3. Trade-off between Risk and Return

Risk is complicated subject and needs to be properly analyzed. The relationship between risk and return is described by investor's perception about Risk and their demand compensation no investor will like to invest in risky assets unless he is assured of adequate compensation for the assumption of risk. Therefore, it is the investors required risk premium that establishes a link between risk and return. In a market dominated by rational investor, higher risk will command by rational premiums and the trade – off between the two assumes a linear relationship between risk and risk premium.

The best mix of expected return and standard deviation for a security portfolio depends on the investor's utility function. If you are a risk – adverse investor who associate risk with divergence from expected value of return, your utility function might be depicted in the following figure. The expected return is plotted on the vertical axis, while the standard deviation is along the horizontal.

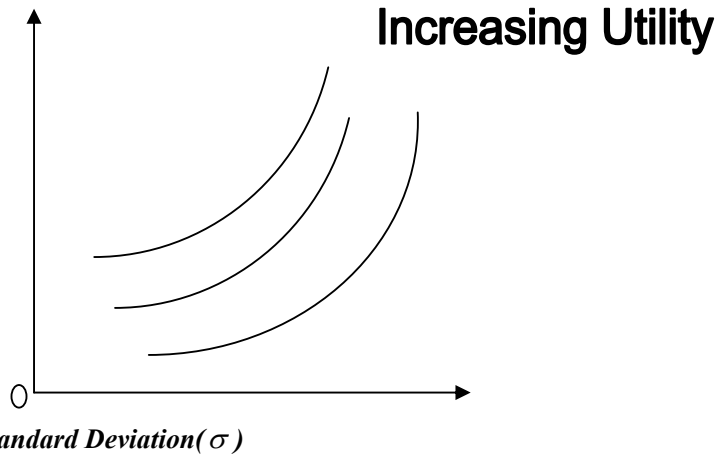


Figure 2.1 Hypothetical Indifference Curve

**Source: James C.V an Home, Financial Management and Policy
11th edition (New) Delhi: Prentic Hall of India, 2000) P.59**

The curves are known as indifference curves, the investor is indifferent between any combination of expected return and standard deviation on a particular curve. In other words, a curve is defined by those combinations of expected utility.

The greater the slope of indifference curves, the more averse the investor is to risk. As we move to the left in Fig.2.1, each successive curve represents a higher level of expected utility. It is important to note that the exact shape of the indifference curves will not be the same for different investors. While the curves for all risk-averse investors will be upward-sloping, a variety of shapes are possible, depending on the risk preferences of the individual. As an investor, you want to hold that portfolio of securities that places you on the highest indifference curve.

Investors are risk-averse. As a result, high-risk assets must offer investors high returns to induce them to make the riskier investments.

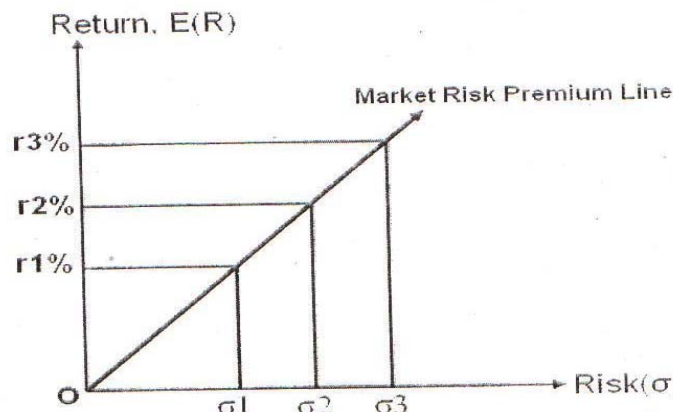


Figure: 2.2- Positive Trade-off between Risk and Return

The figure 2.2, represents a higher risk premium. For taking risk σ_1 , the expected return is r_1 when an investor assumes σ_2 , the return must be r_2 increasing the return (risk premium) by $r_2 - r_1$ for assuming more risk: $\sigma_2 - \sigma_1$. The assumption of linear relationship states is the risk premium must increase or decrease in proportion to a change in level of risk. It also indicates – higher the risk, higher the return and lower the risk, lower the return.

2.1.4. Portfolio Analysis

2.1.1.1 Portfolio and Diversification

According to Jack Clark Francis, "Investment positions are undertaken with the goal of earning some expected rate of return. Investors seek to minimize inefficient deviations earning some expected rate of return. Diversification is essential to the creation of an efficient because it can reduce the variability of returns around the expected return.

Raymond, Brockington defined, "The term 'Portfolio' Simply means collection of investments. For an investor through the stock exchange will be a collection of shareholdings in different companies. For a property investor, portfolio will be a collection of buildings. To a financial manager with in an industrial company, portfolio will be a collection of real capital projects. It will be apparent that the actual nature of the components of portfolio demands on the population of opportunities from which the selection has been made."¹³

George B. Cohen et al. defined the portfolio management as – "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."¹⁴

According to Francis – "Portfolio is simply a combination of two or more securities or assets."¹⁵

"The portfolio manager seeking efficient investments works with two kinds of statistics – expected return statistics and risk statistics. The expected return and risk statistic for individual assets are the exogenously determined input data analyzed by the portfolio analyst. The objective of portfolio analysis is to develop a portfolio that has the maximum return at whatever level of risk the investor deems appropriate."¹⁶

¹³ Raymond Brockington

¹⁴ George, op. cit., P-75

¹⁵ Francis, OP. cit, P 229

¹⁶ Van Horne and Wachowicz, Op. Cit, P.90

Diversification is a risk management technique that mixes a wide variety of investment within a portfolio performance. "Diversification is possibly the greatest way to reduce the risk. This is why mutual funds are so popular."¹⁷

assets more often than not will cancel out each others fluctuation, there of reducing risk.

"Diversification in investments can be achieved in many different ways, Individuals can diversity across one type of asset classification – such as stocks. To do this, might purchase shares in the leading companies across many different (and unrelated) industries, many other diversification strategies are also possible. You can diversify your portfolio across different types of assets (for example stocks, bonds, and real estate) or diversify by regional decisions (such as state, region, or company). Thousands of opinions exist."¹⁸

The common saying "Don't Put all your eggs in one basket". is the essence of the principle of diversification. Because all investments carry with them some level of risk, it is important to diversify and spread your money into many different investments.

"Diversification is important for every investor. In fact, it is so important that in 1990, Harry M. Markowitz won the noble prize largely for his work on diversification."¹⁹

"Investors can reduce their potential for loss through diversification..... the key to diversification is the age – old adage, 'Don't pot all your eggs in one basket'. The main point of diversification is to reduce risk rather than improve expected return..... this is the power of diversification: The whole is grater than the sum of its parts."⁶

Diversification can help to reduce portfolio risky by eliminating unsystematic risk for which investors are not rewarded. Investors are rewarded for taking market risk. By choosing securities of different companies in different industries, we can minimize the risk associated with a particular company's "bad luck" Diversification among companies, industries and assets classes afford the investor the greatest protection against business risk, financial risk and volatility.

¹⁷ <http://www.investopedia.com>

¹⁸ <http://www.ameritrade.com>

¹⁹ <http://www.nefe.org>.

⁶ <http://www.dfaus.com>

Investments whose price movements are opposite each other are negatively correlated. When negatively correlated assets are combined within a portfolio, the portfolio volatility is reduced; Markowitz diversification is more analytical than simple diversification and considers asset's correlation (or covariance). The lower the correlation between assets, the more that Markowitz diversification will be able to reduce the portfolio's risk.

Applying Markowitz diversification to a 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, hundreds, or thousands of different securities simultaneously, it is more powerful methods of analyzing a portfolio than using intuition.

Expected Portfolio Return

The expected portfolio return is the simple weighted average of the expected return from the investment represented by a portfolio. This expected return is calculated by determining the expected return of each component of the portfolio and using these returns to compute a weighted average. The weights used are the portfolio weights, which describe how the portfolio's investment is weighted among the various assets/securities. Portfolio weights are percentage of the total amount available to be invested in the portfolio and sum to 1. The expected return of a portfolio, $E(R_p)$, is calculated as:

$$\text{Expected Portfolio Return} = E(R_p) = \sum_{j=1}^n X_j \cdot E(R_j)$$

Where,

$E(R_p)$ = the expected return on the portfolio

$E(R_j)$ = the expected return of asset J

X_j = the portfolio weight for asset j, where $\sum W_j = 1.0$

n = number of assets/securities in a portfolio

Portfolio risk

The portfolio risk is measured by the variance of the portfolio's rate of return distribution. The portfolio risk depends on the risk of the individual securities and the covariance between the return of the individual securities. The risk (variance of returns) from a portfolio made up of n assets is defined as:

$$\text{Portfolio Risk} = \text{Var}(R_p) = \sum_{j=1}^n \sum_{i=1}^n W_i W_j P_{ij} \sigma_i \sigma_j$$

OR

$$\sqrt{[X_i^2 \sigma_i^2 + 2 X_i X_j r_{ij} \sigma_i \sigma_j + X_j^2 \sigma_j^2]}, \text{ for two assets portfolio}$$

Where,

X_i = Proportion of investment in security i

X_j = Proportion of investment in security j

P_{ij} = Correlation coefficient between i and j securities

σ_i = Standard deviation of security i

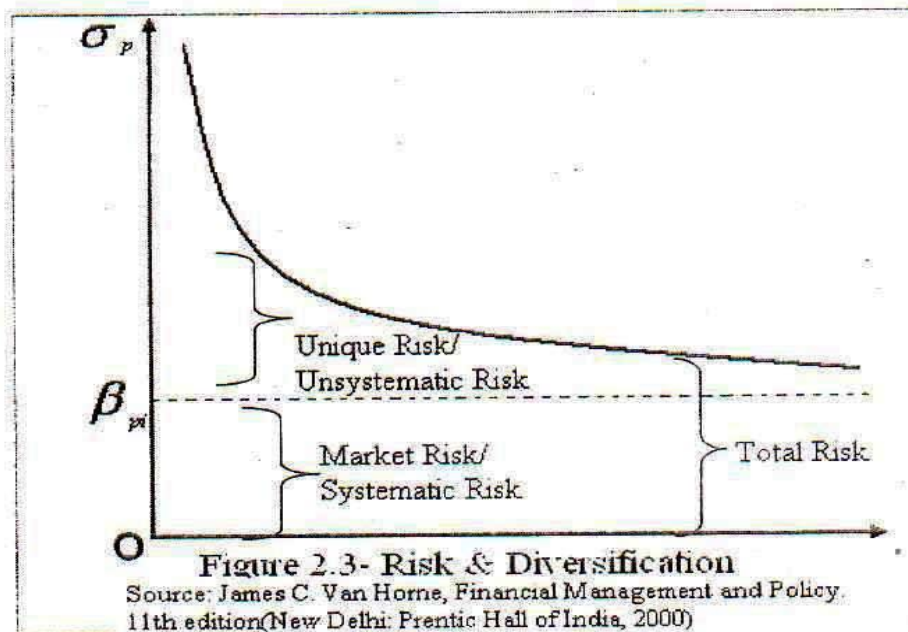
σ_j = Standard deviation of security j

Risk: Systematic Vs. Unsystematic Risk

Systematic Risk: Systematic risk is the variability of a security's return with that of the overall stock market. It is also called unavoidable risk. It is measured by beta. The beta of a stock is the slope of the characteristics line between returns for the stock and those for the market. Beta depicts the sensitivity of the security's excess return to that of the market portfolio. If the slope is 1, it means that excess return for the stocks vary proportionately with excess return for the market portfolio. In other words, the stock has the same unavoidable or systematic risk as the market as a whole. A slope steeper than 1 means that the stock's excess return vary more than proportionately with the excess return of the market portfolio. Put another way, it has systematic risk than the market as a whole. This type of stock is often called an aggressive stock. And a slope less than 1 means that the stock has less unavoidable or systematic risk than does the market as a whole. This type of stock is called a 'defensive' stock.

"Changes in the economic, political and sociological environment that affect securities makes are sources of systematic. Systematic variability of return is found in nearly all securities to varying degrees because most securities tend to move together in a systematic manner".

Unsystematic Risk: In is the amount of a stock's variance unexplained by overall market movements. It can be diversified away. It derives from the variability of the stock's excess return not associated with movements in the excess return in the excess return of the market as a whole.



"Events such as labor strikes, management errors, inventories, advertising campaigns, shift in consumer taste, and lawsuits cause unsystematic variability in the value of a market asset. Since unsystematic changes affects one firm, or at most a few firms, they must be forecast separately for each firm and for each individual incident. Unsystematic security price movements are statistically independent from each other, and so they may be averaged to zero when different assets are combined to form a diversified portfolio. Therefore, unsystematic risk is also called diversifiable risk."

2.1.4.2 Markowitz Portfolio Selection Model

A portfolio is a collection of securities. There exists a problem of portfolio selection. Investors face a problem of selecting optimal portfolio from a set of possible portfolios. Hence, it is often referred to as portfolio selection problem. One solution to this problem was put forth in 1952 by Harry M. Markowitz, when he published a landmark paper that is generally viewed as the origin of the modern portfolio theory approach to investing.

Markowitz's approach begins by assuming that an investor has a given sum of money to invest at the present time. This money will be invested for a particular length of time known as the investor's holding period. At the end of holding period, the investor will sell the securities purchased at the beginning of that period.

Markowitz's model is a theoretical framework for the analysis of risk return choices. Decisions are based on the concept of efficient portfolio. A portfolio is

said to be efficient when it provides maximum expected return for the same level of risk or provides minimum risk for the same level of return.

Portfolio Theory Assumption

The portfolio selection model development by Harry M. Markowitz is based on several assumptions regarding investor's behavior.

- i. Investor considers each investment alternative as being represented by a probability distribution of expected returns over same holding period.
- ii. Investors maximize one period-expected utility and possess utility curve, which demonstrates diminishing marginal utility of wealth.
- iii. Individuals estimate the risk on the basis on expected of the variability of expected returns.
- iv. Investors base decisions solely on expected return and variance of returns only.
- v. For a given risk level, investors prefer high returns to lower returns. Similarly, for a given level of expected return. Investors prefer less risk to more risk.

2.1.4.3 The Efficient Set Theorem

An infinite number of portfolio can be formed a set of N securities. The investor can buy any one security or buy more securities in order to create a portfolio. An investor can distribute his or her investing money in different securities.

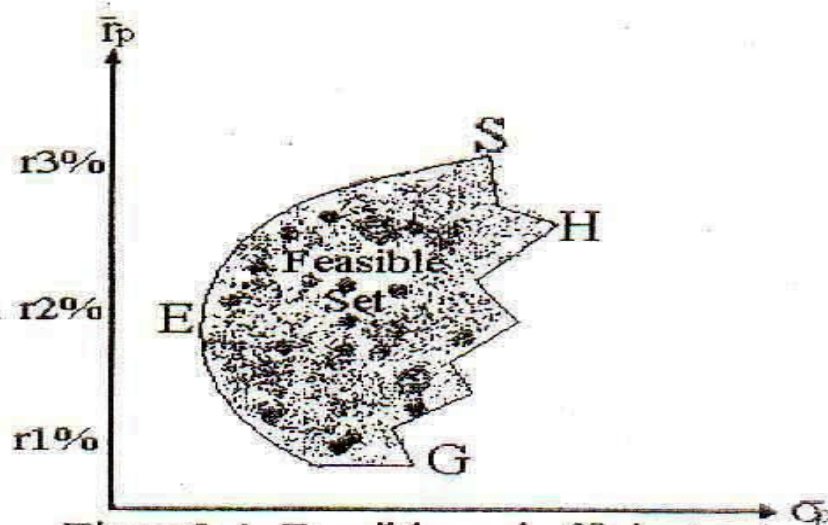


Figure 2.4- Feasible and efficient set

Source: William F. Sharpe et al. Investments, 6th edition, 11th edition (New Delhi: Prentice Hall of India, 2000) p. 172

The investor should not have to evaluate all these portfolio. The investor can select an optimal portfolio from a feasible set of portfolio. Efficient set theorem states that:

An investor will choose his or her optimal portfolio from the set of portfolio that

1. Offer maximum expected return for varying level of risk, and
2. Offer minimum risk for varying level of expected return.

The set of portfolio meeting these two conditions is known as the efficient set. Efficient set is also known as the efficient frontier.

2.1.4.4 The Feasible Set

Figure 2.4 is an illustration of the location of the feasible set/the opportunity set. Efficient set can be identified from the feasible set. The feasible set simply represents all portfolios that could be formed from a group of N securities. All the possible portfolio, which could be formed from the N securities, lie either on or within the boundary of feasible set. In general, this will have an umbrella type shape similar to the one shown in the figure 2.4.

2.1.4.5 The Efficient Set Theorem applied to the Feasible Set

The efficient set can now be located by applying the efficient set theorem to this feasible set. To begin with, The set of portfolios that meet the first condition of the efficient set theorem must be identified. Looking at figure 2.4 there is no portfolio offering less than that of portfolio E because if a vertical line were drawn through E, there would be no portfolio offering more risk than that of portfolio H because if a vertical line were drawn through H, there would no point in the feasible set to the right of the line. Thus the set of portfolios offering maximum expected return for varying level of risk is the set of portfolios lying on the northern boundary of the feasible set between points E and H.

Considering the second condition next, there is no portfolio offering an expected return greater than portfolio S (Because no point in the feasible set lies above a horizontal line going through S). Similarly, there is no portfolio G, because no point in the feasible set lies below a horizontal line going through G. Thus, the set of portfolios offering minimum risk for varying levels of expected return is the set of portfolios lying on the western boundary of the feasible set between G and S.

Remember that both conditions have to be met in order to identify the efficient set. It can be seen that only those portfolios lying on the northwest boundary between points E and S of so. Accordingly, these portfolios form the efficient set and it is from this set of efficient portfolios that the risk adverse investor will find his or her optimal one. All the other feasible portfolios are inefficient portfolios and can be ignored.

2.1.4.6 Selection of the optimal portfolio

To select an optimal portfolio, an investor should plot his or her indifference curves on the efficient set and then proceed to choose the portfolio that is on the indifference curve that is farthest northwest. This portfolio will correspond to the point at which an indifference curve is just tangent to the efficient set. As can be seen in the figure 2.5, this is portfolio 0* on indifference curve I2. Although the investor would prefer a portfolio on I3, on such portfolio exists, wanting to be this indifference curve is just wishful thinking. In regard to I1, there are several portfolios that the investor could choose (For example O). However, the figure shows that portfolio 0* dominates such portfolios because it is on an indifference curve that is farther northwest. The portfolio selection for a highly risk - averse investor has been shown in Figure 2.6.

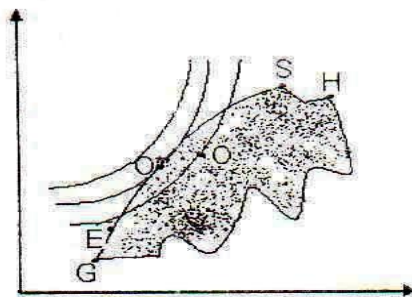


Figure:2.5 Selecting an Optimal Portfolio
 Source: William F. Sharpe et al. Investment. 6th edition.
 (New Delhi: Prentice Hall of India Limited, 2002) p. 173

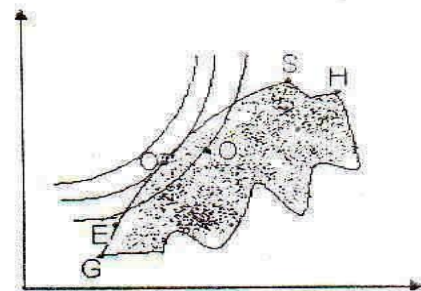


Figure2.6. Portfolio Selection for a Highly Risk- Averse Investor
 Source: William F. Sharpe et al. Investment. 6th edition.
 (New Delhi: Prentice Hall of India Limited, 2002) p. 174

Upon reflection. The efficient set theorem is quite rational. The efficient set theorem, stating that the investor needs to be concerned only with portfolios that lie on the northwest boundary of the feasible set, is a logical consequence.

2.1.5 Capital Asset pricing Model (CAPM)

"The capital assets pricing model states that the expected risk premium on each investment is proportional to its beta. This means that each investment should lie on the sloping security market line connecting Treasury bills and Market portfolio."

In market equilibrium, a security will be expected to provide a return commensurate with its unavoidable risk. This is simply the risk that cannot be avoided by diversification. If greater the unavoidable risk of a security, the greater the return that investors will expect from the security. The relationship between expected return and unavoidable risk, and the valuation of securities that follows, is the essence of the capital assets pricing model (CAPM). This model was developed by William F. Sharpe (1990 Nobel Prize winner in economics) and John Linter in the 1960s, and it has had important implications for finance ever since.

The CAPM used to calculate the required rate of return for stock J is:

$$E(R_j) = R_f + [E(R_m) - R_f] \beta_j$$

Where,

$E(R_j)$ = the expected or ex - ante return on the jth risky asset

(R_f) = the rate of return on a risk less asset

$E(R_m)$ = the expected or ex - ante return on the market portfolio

$\beta_j = \text{Cov}(R_j, R_m) / \text{Var}(R_m) =$ a measure of the un - diversifiable risk of the Jth security.

The greater the beta of a security, the greater the risk and the greater the expected rate required, Likewise, the lower the beta, the lower the risk, the more valuable it becomes and the lower the expected return required.

"In market equilibrium, the relationship between an individual security's expected rate of return and its systematic risk, as measured by beta, will be linear. The relationship is known as the **Security market line.**" When the CAPM is graphed in a figure, it is that they fall on the SML. The fact is that they have different variances, which are irrelevant for determining their expected return, because total risk contains a diversifiable component, which is not priced in market equilibrium. SML may be used to explain the required rate of return on all securities whether or not they are efficient. The SML provides a unique relationship between un-diversifiable risk (measured by beta) and expected rate of return. hence, if we can accurately measure the beta of a security, we can estimate its equilibrium risk adjusted rate of return.

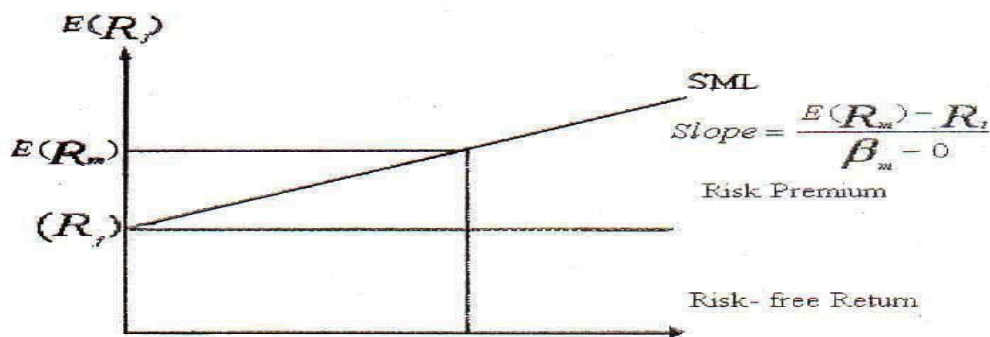


Figure 2.7: The Security Market Line/CAPM

Source: James C. Varn Hon. Financial Management and Policy, 11th edition (New Delhi:Prentice Hall of India Limited, 2000) p. 71

The CAPM of SML is an equilibrium theory of how to price and measure risk. It has many applications for capital budgeting, asset valuation, determination of cost of equity capital and the explaining risk in the structure of interest rates.

The logic of the SML equation is that the required return on any investment is the risk free return plus a risk premium required for the market return by the riskiness of the individual investment. If the return on the individual investment fluctuates by exactly the same degree as the returns on the market as a whole, the beta for the security is one. In this situation, the required return on the individual investment is the same as the required return on the total market. The risk premium is measured by the slope of SML.

William F. Sharpe in his Autobiography states. "The CAPM is built using an approach, familiar to every micro economist. First one assumes some sort of maximizing behavior on the part of participants in a market, Then one investigates had provided a model for the requisite maximizing behavior, it is not surprising that I was not alone in exploring its implications for market equilibrium sometimes in 1963, I received an unpublished paper from Jack. Treynor containing somewhat similar conclusions. In 1965 John Lintner published his important paper with very similar results, Later, Jan Mossin published a version that obtained the same relationship in a more general setting."

Assumption of the CAPM

Capital market theory (CMT) uses portfolio theory thus the assumptions underlying portfolio theory also pertain to the CAPM. The additional assumptions underlying CMT and the CAPM appear less realistic than the portfolio theory assumptions. The assumptions of CMT are as follows.

1. All investors are risk-averse. Thus, all investors seek to be on the efficient frontier.
2. There are no constraints on the amount of money that can be borrowed or lent, Borrowing and lending occur at the identical risk - free rate, R_f
3. All investors have identical beliefs about the expected return and risks of assets and portfolios that are all investors have homogeneous expectations.
4. All investors have a common investment horizon, whether it be one month, one year or otherwise,
5. All the investments are infinitely divisible and marketable, that is it is possible to buy or sell any portion of an asset or portfolio.
6. Taxes and transaction costs do not exist. That is there are no tax effects costs of acquiring information or transaction costs associated with buying or selling securities. There are often referred to as perfect market assumptions. Markets

are assumed to be competitive; therefore the same investment opportunities are available to all investors.

7. There are no unanticipated changes in inflation or interest rates.
8. The capital markets are in a state of equilibrium or striving toward equilibrium. There are no under priced or over priced securities, if under pricing or overpricing exists the prices will move to correct this disequilibrium situation.

Under and Over Valuations.

In market equilibrium, the CAPM implies an expected return-risk relationship for all individual securities (The security market line). If an individual security has an expected return-risk combination that places it above the security line, it will be undervalued in the market. That is, it provides an expected return in excess of that required by the market for the systematic risk involved. $\bar{R}_j > R_f + [E(R_m) - R_f] \beta_j$. As a result, the security will be attractive to investors. According to the theory, the increased demand will cause the price to rise until the expected return declines sufficiently for the security to lie on the security market line and, thereby for $\bar{R}_j > R_f + [E(R_m) - R_f] \beta_j$. An overvalued security is characterized by an expected return line. This security is unattractive, and investors holding it will sell it and those not holding it will avoid it. The price will fall and expected return will rise until there is consistency with the security market line and with equilibrium pricing.

Portfolio performance Evaluation

2.1.6.1 Sharpe's Portfolio performance Measure

Ranking Portfolio's average returns ignores the skill with which they minimize risk and therefore presents an oversimplified picture. Hence, in assessing the performance of a portfolio, it is necessary to consider both risk and return. William F. Sharpe devised an index of portfolio performance for portfolio I as:

$$s_i = \frac{\text{Risk Premium}}{\text{Total Risk}} = \frac{\bar{r}_j - R}{\sigma_i}$$

Where,

S_i = Sharpe index of portfolio performance for portfolio i

\bar{r}_j = Average Return from Portfolio i

σ_i = Standard deviation of returns for portfolio i

R = Risk - less rate of interest.

$\bar{r}_j - R$ is the risk premium for portfolio i. The risk premium is the additional return over and above the risk-less rate that is paid to induce investors to assume risk.

Sharpe's index of performance generates one number that is determined by both the risk and the return of the portfolio or other investment being evaluated.

2.1.6.2 Treynor's Portfolio performance Measure

Jack Traynor conceived an index of portfolio performance that is based on systematic risk, as measured by portfolio's beta coefficients. He suggests measuring a portfolio's return relative to its systematic risk rather than relative to its total risk, as does the sharpe measure. Treynor's index is ascertained as:

$$T_p = \frac{\text{Risk Premium}}{\text{Systematic Risk Index}} = \frac{\bar{r}_j - R}{\beta_p}$$

Where,

T_p = Treynor's index of portfolio performance for portfolio i

\bar{r}_j = Average Return from Portfolio i

β_p = Systematic risk index of returns for portfolio i

R= Risk - less rate of interest

2.1.6.3 Jensen's Portfolio Performance Measure

Dr. Michael C. Jensen has modified the characteristic regression line to make it useful as a one parameter investment performance measure. The basic random variable in Jenson's model is risk premiums, such as:

$$rp_{ij} = r_{ij} - R_i$$

Where,

rp_{ij} = risk premium for asset i in period t

r_{ij} = One period rate of return from asset i in period t

R_i = risk - less observed in period t.

2.2. Review of Journals, Articles and Websites

In Nepal, there are not many articles available in the published form relating to investment portfolio management of commercial banks. However here are some independent studies relating to present study carried out before few years. There are limited materials related to this topic which are presented as follows.

American Association of Individual Investors under the "Investing Basis" describes - "It is important to understand how personal circumstances affect investment decisions. If these factors make no differences we could simply publish one suggested portfolio for everyone to follow. However, your tolerance for risk, your return needs (Whether income or growth) the length of time you can remain invested and your tax status all have an important effect on the kinds of investments. Investment profile is the beginning of the asset allocation process, which consist of dividing your portfolio among the major asset categories of stocks, bonds and cash. The asset allocation decision that you make here will have a far more effect on your overall portfolio return make allocation decisions with the major categories, For instance, stock portfolio can be divided among large capitalization stock, small capitalization stocks and international stocks. Once these decisions are reached, your will be ready to make selections among the various investment options. Lastly, once you will have set up your investment portfolio, you must monitor it making changes, when appropriate, Every investor wants the highest assured return possible. But as we have seen returns aren't certain and different investors have varying degree of uncertainty that they are willing to accept,"

"The investor return is a measure of growth in wealth resulting from that investment. This growth measure is expressed in % forms to make it comparable across large and small investors, Stock return may be riskier or more volatile. But this concept is a difficult one to express simply. To do so, we borrow a concept from statistics, called standard deviation. It is a single.

Measure, allowing quantifying asset reruns by risk and it also provides the basis for investor's decisions about portfolio choice."

Joan Warner under the article "Diversify is still the Managers Mantra States, "Some investors got a rude shock in 1995. They thought global diversification would maximize opportunities while reducing their risk. Instead, Investors who sank all their saving into a mutual fund indexed to the all American Standard & Poor's 500-stock Index earned 37% compared with 12.5% for sophisticates who put their money in funds composed of international stocks and bonds.

But many money managers are betting that 1995 will turn out to have been exception. They argue that late summer. American's love affair with their high technology issues also fueled the rise. Now, the steep run up in US stock prices has many investors chanting their mantra of global diversification more loudly than ever.

Some allocates are shifting their resources to capture the greater gain they expect overseas. Indeed, the best way to exploit the benefits of falling rates around the world may be to carve up a portfolio into fairly even slices."

Mr. Warner further reiterates that asset allocates favor southeast Asia as a region to comb for bargains. In emerging markets of the pacific Rim, including Malaysia, Thailand and Indonesia, Fremont Global's Haddick recommends liquid stocks such as bank and utilities. These stand to gain from lower inflation and falling interest rates and "are trading at the low to midpoint of their historical valuation ranges, He further named Josh F. H. Trott, London based chief international investment officer of Bessemer Trust Co, who is putting the biggest portion of his 20% allocation of non US stocks in New Zealand and Sustralia. John F. H. Trott believes industrial and banking shares there are better buys than the bigger, more commonly held resource stocks. Given the benefits, how many investors actually hold diversified portfolio? A Study by William N. Goetz Mann and Alok Kumar, "Equity Portfolio Diversification" Concluded the number was disturbingly low. After examining more than 40,000 equity investment accounts at a large discount brokerage firm from 1991-1996 the authors found that the vast majority of investors held portfolios that were celery undiversified, with holdings typically concerned in just a few stocks. The average investor held a portfolio consisting of just four stocks. Amazingly, they found that less than five percent of investors held at least ten stocks.

The journal of finance, published bimonthly by American Finance Association for many decades is considered. In August 1999, an article entitled "Local Returns Factors and Turnover in Emerging Stock Markets" by K. Greet Rouwenhorst was published which is reviewed here.

"There is growing empirical evidence that multiple factors are cross-section ally correlated with average returns than large stocks (Bang 1981), Fama Frenceh (1992/1996) and Lakosnishock, shleifer and Vishny (1994) show that value/stocks with book to market (B/M) earnings to price (E/P) cash flow to price (C/O) outperform growth stocks with low B/M, E/P or C/P moreover, stock with high return over the past three months to one year continue to outperform stocks with poor prior performance (Jagadees and Titman 1993).

The evidence that beta is also compensated for in average returns is weaker (Fama and French 1992), Kothari, Shalton and Sloan (1995)

The interpretation of the evidence is strongly debated, some believe that the premiums are a compensation for pervasive risk factors, others attribute them to firm characteristics or inefficiency in the way market incorporates information into prices, Yet others argue that survivorship or data snooping may bias the premiums.

This paper examines the sources of return variation in emerging stock markets. From the perspective of collecting independent samples, emerging market countries are particularly interesting because of their relative isolation from the capital market of other countries, compared to developed markets, the correlation between most emerging market and stock markets has historically been low (Harvey 1995) and until recently many emerging countries restricted investment by foreign investors. Interestingly Beakaert and Harvey (1995) find that despite the recent trend toward abolition of these restrictions and the substantial inflows of foreign capital markets have actually become more segmented from world capital of emerging economic is held by local investors who are likely to evaluate their portfolios in light of local market conditions (Bekaert and Harvey 1997)²¹

On the above background Rouwenhorst attempts to answer two sets of questions "The first set of three questions concerns the existence of expected returns premiums".

Do the factors that explain expected returns differences in developed equity markets also describe the cross section of expected returns of emerging market firms?

Are the returns in emerging markets primarily local or do they have global components as well?

How does the emerging market evidence on factors present in markets around the world?

An article entitled "Efficient Banking" was published by L.D. Mahat on Kathmandu Post Daily date 28th April 2004. In this article he has accomplished

²¹ K. G. Rouwenhorst, 1999 "Local Return Factors and Turnover in Emerging Markets" The Journal of Finance PP 1439-40

that the efficiency of banks can be measured using different Parameters. The concept of productivity and profitability can be applied while evaluating efficiency of banks. The terms productivity refers to the relationship between the quantity of inputs employed and the quantity of outputs produced An increase in productivity means that more output can be produced from the same inputs or the same outputs can be produced from fewer inputs. Interest expense to interest income ratio shows the efficiency of bank in mobilizing resource at lower cost and investing in high yielding assets In other words, it reflects the efficiency is used of funds.

According to Mr. L.D. Mahat, the analysis of operational efficiency of banks will help one in understanding the extent of vulnerability of banks under the charged scenario and deciding whom to bank upon. This may help the inefficient banks to upgrade their efficiency and be winner is the situation developing due to slowdown in the economy. The regulators should also be concerned on the fact that the banks with unfavorable ratio may bring catastrophe in the banking industry.

Mr. Shiva Raj Shrestha (1998) has given a short glimpse on article entitled "Portfolio Management in commercial Banks, Theory and Practices" (Nepal bank Patrika: 2005)

Mr. Shrestha in his article has highlighted the followings issues:

- The portfolio management becomes very important both for individuals and institutional investor.
- Investor would like to select better mix of investment assets subject on these aspects like, higher return that is comparable with alternatives according to the risk class of investor.
- Good liquidity with adequate safety on investment, maximum tax concession, economic efficient and effective mixes.

For fulfilling those aspects, the following strategies will be adopted.

- Do not hold any signal security i.e. try to have a portfolio of different securities.
- Choose such portfolio of securities, which ensure maximum return with minimum risk or less return for wealth maximizing objectives.

He has mention short transitory view on portfolio management in Nepalese commercial banks. Nowadays number of banks & financial institution are operating in this sector are having greater networks and access to national and

international markets. They have to go with their portfolio management very seriously and superiority, to get success to increase their regular income as well as to enrich the quality service to their clients. In this competitive and market oriented open economy, each commercial banks and financial institution has to play a determining role by widening various opportunities of the sake of expanding provision of best service to their customers.

In this context he has presented two types of investment analysis techniques i.e. fundamentals analysis to consider any securities such as equity debenture or bond and other money and capital market instrument. He has suggested that the banks having international joint venture network can also offer admittance to global financial markets. He has pointed out the requirement of skilled labors, proper management information system in joint venture banks and financial institution to get success in portfolio management and customer assurance.

According to Mr. Shrestha the portfolio management activities of Nepalese commercial banks at present is in nascent stage. However, on the other hand most of the banks are doing such activities so far because of following reasons. Such as unawareness of the client about the service available, hesitation of raking risk by the client to use such facilities, lack of proper techniques to run such activities in the best and successful manner, less development of capital market and availability of few financial investment in the financial market.

He has given the following conclusion for smooth running and operation of commercial banks and financial institution.

- For surviving commercial banks should depend upon their own financial health and various activities.
- In order to develop and expand the portfolio management activities successfully, the investment management methodology of portfolio manager should reflect high standards and given their clients the benefits of global strengths, local insights and product philosophy.
- With the discipline and systematic approval to the selection of appropriate countries, financial and systematic approval to the selection of appropriate countries financial assets and management of various risks the portfolio manager could enhance the opportunity for each investor to earn supervisor returns over time.

The Nepalese banks having greater network and access to national and international capital market have to go for portfolio management activities for the increment of their fee based income as well as to enrich the client base and contribute to the national economy.

An article was published in a newspaper named **Business Age** at May 2008 by Pratishtha Bhurtel and matrika Babu Pokherel on the title "Market Outlook" This article is reviewed here.

Due to the political metamorphosis, investors seemed to walk in havoc. The market turmoil pulled the standard index downhill as soon as the market reopened after a break of 9 days for the constituent assembly election. The investors were perplexed if the Maoist party that recorded big electoral victory would allow the mixed economy and would not thrust the command economy Moreover; the merger news flying in the market has enabled some forces to play a game. The rumor of the five finance companies (Mahalaxmi Finance Ltd. Butwal Finance Ltd. Birgunj Finance Ltd, Diddharthe Finance Ltd and Himchuli Development Bank Ltd) Shaking hands together rocketed the price of these companies, without relying on facts and running after anecdotes has resulted in such a scenario The 3rd quarter report published this month has raised the share price of most of the companies in finance sector. The net profit reported is more than that of the previous corresponding period. This can be a reason for the leap in shares prices of such companies. About 90% of the pie is covered by the financial sector this month. In the coming month, the stock market is likely to get shot in the arms, because it will be getting more stocks listed from real sector such as Nepal Telecom, Chilime is also likely to issue shares to the public shortly, after this month, these developments will definitely rock the market and the demand for month, These developments will definitely rock the market and the demand for proper analysis to forecast stock trend would increase. Hence, the next month would be tougher for investor to identify phoney and fair trend.

In this article the writers describe about some market indicators and how the market is affected by the market information.

One other article form this newspaper Business Age is also reviewed there, which was published on may 2008 by the name Making it or Breaking it on the Stock market.

Can be Stock Market be considered a zero-sum game, where one investor's loss is another investor's gain? While this can be true much to the woe of unlucky investor, it is typically only true in the short term. However, this reasoning causes many people to shy away from the stock Market, Gambling, on the contrary, is always a zero-sum game because one always wins at the cost of the cost of the other. It merely takes money from a loser and gives it to a winner. No value is every created But by investing in a share, we increase the overall wealth of an economy. As companies compete, they increase productivity and develop products that can improve our lives.

Therefore, one should not confuse investing and creating wealth with gambling's zero-sum game. Still it should be kept in mind that investing is not a zero-sum game only if the motive of investment is not short-term gain. If you invest for the long term, even if you lose some money on a few stocks this year you will gain on some others. Interestingly, all other investors are also making profit since prices in the stock market are continuously rising over the long term.

To understand why investing in stocks is inherently different from gambling we need to review what it means to buy stocks. The word stock simply refers to a supply. In the financial market, stock refers to a supply of money, this supply comes from people who have given money to the company in return for a share of the company in hopes that the company will make their money grow. Stock is ownership in a company. Shareholders hope the company will earn money as it grows. If a company earns money, the shareholders share the profits. It entitles the holder to a claim on assets as well as a fraction of the profits that the company generates. Too often, investors think of shares as simply a trading vehicle and they forget that stock represents partial ownership of a company over time people usually earn more from owning stock than from leaving money in the bank, buying bonds, or making other investments.

The term 'Stock Market' is a concept for the mechanism that enables the trading of company shares, other securities and derivatives, Market is a public place where things are bought and sold. It refers to the business of buying and selling stock participants in the stock Market range from small individual stock investors to large fund traders, who can be based anywhere. Many years ago, worldwide buyers and sellers were individual investors, such as wealthy businessmen. It was believed that the Stock Market was an exclusive club in which only brokers and rich people could make money. Over time, markets have become more "Institutionalized". Buyers and sellers are largely institutions (e.g. insurance companies, mutual funds, investor groups, and banks). The rise of the institutional investor has brought with it some improvements in market operations.

Assessing the value of a company isn't an easy practice. There are so many variables involved that the short-term price movements appear to be random (academics call this the Random Walk Theory) however, over the long term, a company is only worth the present value of the profits it will make. In the short term a company can survive without profits because of the expectations of future earnings, but no company can fool investors forever - eventually a company's stock price can be expected to show the true value of the firm. In the stock market, investors are constantly trying to assess the profit that will be left

over for shareholders. This is why stock prices fluctuate. The outlook for business conditions is always changing and so are the future earnings of a company.

Security prices are sometimes too high or too low. We sometimes say that Stocks that go up must come down. But the laws of physics do not apply in the stock market. There is no gravitational force that pulls stocks back to even, what's behind the stock? It's the company! We should not assume that rational economic irrationally is not the same as saying that there is no rational explanation for market movements.

If we can't forecast stock market movements, then there is not much point in wasting valuable time on it. Why do investors worry about bear markets? They worry because they don't want to lose money when their stocks decline in value. In dire circumstances, you might lose your money if your neighbor succeeds in forcing you to sell your assets under his terms. This is one of the reasons why some investors will avoid selling a poorly performing stock even when they feel it will continue going down. They don't want to face the pain involved with a loss.

It is believed that the fallen angles will all go back up, eventually. But buying companies solely because their market price has fallen will get you nowhere. Make sure you don't confuse this practice. Whatever the reason, amateur investors think that a stock trading near a 52-week low is a good buy. As a warning to those investors, there is a popular saying in the market "Those who try to catch a falling knife only get hurt."

People have many motives for trading in the Stock Markets that are not related to maximization of financial wealth, the choice between consumption and spending or logical expectations of future returns. Most market participants do not have the time, inclination or capacity to exercise due diligence on all available information before making trading decisions. But it is crucial in the stock market that individual investors have a clear understanding of what they are doing with their money. Only those investors succeed who really do their homework.

Fear, greed, superstition, laziness, undue haste, panic, carelessness, negligence and stupidity are often important in financial decisions. In order to reduce the possibility of future regret, many investors will simply follow the crowd by investing in popular stocks, rationalizing that if they lose, they will not be the only one to have made a bad decision. Trusting the judgment of others (or

following the crowd) and making snap decisions based on insufficient information are common habits of investors.

We cannot assume that market players behave in predictable ways based on economic fundamentals. A rising price on any share will attract the attention of investors. Market players have reasons for buying and selling investment assets, but these reasons are not always 'economically rational' and change from time to time. When investors continue to buy into an over-priced market, they act irrationally. Some economists assume that market players - in the long run - behave rationally and that self-interest acts like an Invisible Hand that guides players along a predictable path.

The best way to grow your money is to find stocks you like and sit on them for as long as you can. You can't beat the stock market, so you might as well just wait it out.

Another article published on The Kathmandu Post daily of 28th April 2007 entitled "Efficient Banking" by **L.D. Mahat**, in his article he has accomplished, the efficiency of banks can be measured using different parameters. The concept of productivity and profitability can be applied while evaluating efficiency of banks. The term productivity refers to the relationship between the quantity of inputs employed and the quantity of outputs produced. An increase in productivity means that more output can be produced from the same inputs or the same outputs can be produced from fewer inputs. Interest expense to interest income ratio shows the efficiency of banks in mobilizing resource at lower cost and investing in high yielding asset. In other words, it reflects the efficiency in use of funds.

Mr. Yogendra Timilsina has published an article on "Managing Investment portfolio" He is however, confronted with problems of managing investment portfolio particularly in times of economic slowdown like ours. A rational investor would like to diversify his investments in different classes of assets so as to minimize risks and earn a reasonable rate of return.

Commercial banks have continuously been reducing interest rates on deposits. Many depositors are exposed to the increasing risk of non-refund of their deposits because of the mismanagement in some of the banks and finance institutions and accumulation of huge non performing assets with the. Few depositors of cooperative societies lost their deposits because some of these cooperatives were closed down because of their inability to found public deposits. An investor in days of crisis has to make an effort to minimize the risk and at least earn a reasonable rate of return on his aggregate investment.

An investment in equity share can earn dividend income as well as capital gain in the form of bonus share and right share until an investor holds it and capital profit when he sells it in the stock market. As returns from equity investments have fluctuated within a very wide range, investors feel in much difficulty to balance risk and reward in their equity portfolio. As a matter of fact, investors in equity shares should invest for a reasonable long time frame in order to manage the risk.

Making investment in fixed deposits with commercial banks is a normal practice among the common people. Normally fixed deposits with banks are considered risk less, but they also are not 100% free of risk, You should select a bank to put your deposit therein, which has sound financial health and high credibility in banking business, In thymes of crisis if you select a sick bank deposit your money there is high probability that your money could be returned back.

In investor may have option of making investment in government bond or debentures? In history we have examples that a government coin nationalize the private property of its citizen, cancel out old currency notes, and can convert the new investment into come conditional instrument. But in democracy there is no probability that government would default to repay money bank, this is comparatively risk free investment, but yields low return. An investor has to evaluate the risk and return of each of the investment alternatives and select an alternative, which has lower degree of risk and offer at least reasonable rate of return, On can draw a safe side conclusion to invest all the money he has only in government securities, but this is not a rational decision. An investor who doesn't try to maximize return by minimizing the possible risk is not a rational investor. On the other hand, one can place over-confidence on equity investment and assume high risk by investing the whole money in equity shares. Stock market these days is much dwindling and notoriously unpredictable; therefore this too is not a wise decision. Therefore, a portfolio. Which consists of only one class of financial assets, is not a good portfolio.

2.3 Review from previous Thesis

Before this thesis, some students have conducted several Thesis works, some of them are supposed to be relevant which are presented below.

Mr. J.B. Sapkota (1999) submitted a thesis named "Risk and return analysis in common Stock investment" with special reference to banking industry to T.U. The main objective of the study was to analysis the risk and return of the common stocks in Nepalese stock market.

In his findings, he summarized. "Banking industry is the biggest one in terms of market capitalization and turnover. In this regard, common stock of Nepal bank Ltd. Is most risky and common stock of SBI Bank is least risky. In the contest of industries, expected return of finance and insurance industry is found highest Expected return of banking industry is 60.83%.

Mrs. Pramila Tuladhar (2002), conducted a thesis entitled " A study on risk and return analysis of common stock Investment." has been done in 2002 the study is based on eleven companies: two companies are selected from each group that is categorized by NEPSE.

The main objectives of the study are:

- To describe the risk, return and other relevant those are very important in making decision on stock investment.
- To identify the problem faced by the individual investors in stock market.
- To analyze the risk and returns of common stock and their portfolio.
- To access the past and present state of investment of common stock.

The study is based on randomly selected 11 companies. The study is based on recent historical data. In covers 7 years period from F/Y 1995/96 to 2001/02 the study has summarized the following findings:

- Among each sample, ERR of Nepal Bangladesh Bank is the highest.
- Bishal Bazaar Co. has the lowest S.D. According to sector wise comparison, Banking has the highs ERR with 11.92. Other sectors have the highest S.D. With 43.73 and trading sector has lowest S.D. with 11.10. Other sector has the highest C.V. with 595.78 and insurance sector has lowest C.V. with 285.58.

Mr. Roopak Joshi (2002) conducted a thesis named "Investor's problems in choice of optimum portfolio of stocks in Nepal stock Exchange." The main objectives of the study were to find out and analyze the major problems of investor facing regarding the selection of most profitable stocks in NEPSW. He has used historical data in order to achieve his objectives. He has summarized his findings as "Portfolio management is a new concept for Nepalese investors. Due to lack of sufficient information internal as well as external, the stock market of Nepal is also on growing state only. There is only stock exchange located in kathmandu. Traditional cry system for trading stocks, limited number of securities broker, lack.

Manilata Manandhar 2003) in her thesis entitled" Analysis of risk and return on common stock investment of commercial bank in Nepal" has been done in 2003. The main objective of the study is to analyze risk & return on common stock investment of CBs and other objectives are as follows:

- To examine risk & return on common stock of NABIL, BOKL, HBL, NBBL, NIBL,
- To calculate risk & return of their portfolio.
- To identify whether stocks of selected companies are overpriced. Under price and equilibrium priced.

Major finding:

- Stocks have grater volatility risk than other investment. This takes a random and unpredictable path. Stock market is risky in short term and it is necessary to prepare the investors for it.
- This study used the historical data of five years starting from F/Y.0583/054 to 057/058 and found that F/Y 057/058 is best or banking sector according to market capitalization.
- Expected return of the common stock of BOKL is maximum (i.e. 1.1267) due to the effect of unrealistic annual return, Similarly, expect return of the common stock of NIBL is found minimum(u.e.0.4917) On the basis of sector wise comparison, expected return on banking sector (i.e.67. 39%) is higher and others sectors the least (i.e.0.65%).
- Risks associated with common stock investment of different selected companies are 1.3949, 0.7392, 0.6798 and 0.1429 of BOKL, NABIL, HBL, NBBL, and NINL respectively. In the context of comparison of banking sector with other sector expected return in greater than that of other sectors.

Standard deviation of other sector is greater than that of other sectors. CV of Others sector is greater than that of others.

- Beta explains the sensitivity or volatility of the stock with market. If beta is greater than one then the asset is called an aggressive asset.
- Will minimize risk without losing considerable return. If beta is less than one then the asset is called defensive Stock. If the beta is equal is called average asset.
- BOKL, NABIL, HBL, Nibbl's beta coefficient is 2.30, 2.01, 1.0853, 1.7632 & 1.7441 respectively, which is greater than one. Therefore such banks common stocks are more volatile with market. On the other hand NIBL's beta coefficients 0.3461, which is less than one, therefore common stock of NIBL is said to be less volatile with market.
- One of the main significance of beta coefficient is in capital asset pricing model (CAPM), CAPM is a model that describes the relationship between risk and return.
- Stock of all banks in this study are said to be under priced. These companies' common stocks are worth to purchase, as their expected return is greater than required rate of return.
- Portfolio return is greater than portfolio risk of two banks (i.e. NBBL & HBL)

Mr. Khaniya (Banjade), Kalpana, (2003), in her thesis entitled " Investment Portfolio Analysis of joint venture Banks" has been done in 2003. The study is based on five joint venture banks and they are: NABIL, SCBNL, HBL, NBBL & EBL. The general study of the present study is to identify the current situation of investment portfolio of joint venture banks in Nepal. The specific objectives are as follows.

- To analyze the risk and return ratios of commercial banks.
- To evaluate the financial performance of joint venture banks.
- To study exiting investment policies taken by Nabil in Various sectors.
- To study portfolio structure Nabil Bank ltd. In investment as compared to other joint venture banks.
- Preference given by Nabil Bank ltd. In investment as compared to other joint venture banks.
- Preference given by Nabil bank ltd. For investment between loan investment in real fixed assets, investment in financial assets.

Major finding:

Based on the analysis of the various data remarkable finding are drawn up. The major findings are as follows.

- SCBNL and HBL have better position. NBBL and NABIL have a low position in the industry, But EBL has a very low position in the industry because of having lowest mean return on shareholder's fund resulting from the negative return in the fiscal years 1955/96 and 1996/97.
- SCBNL has the highest mean return and EBL has the lowest return. Except EBL, all other four banks i.e. NABIL, SCBNL, HBL and NBBL have good performance.
- Among other joint venture banks, SCBNL has the highest return and EBL has above mean return than industry average. SCBNL and EBL mobilizes the funds in investment title is higher than the standard ratio.
- NABIL, SCBNL and HBL are investing low amount of deposits on loans and advance which is lower than industry average and NBBL and EBL have invested a high amount of deposits to loans and advance title which is higher than industry average.
- NABIL is investing the highest amount of funds on NRB bond as compared to other JVBs i.e. 3% NBBL has invested no amount of funds in this title and EBL has invested the lowest of funds i.e. 0.4% and SCBNL and HBL have invested above industry average.
- SCBNL has the highest EPS and EBL has the lowest EPS. Similarly HBL also has above mean EPS than industry average and that of NBBL is lower than industry average.
- HBL has the lowest beta coefficient among the five JVBs which mean that the systematic risk of HBL is the lowest among JVBs. The portfolio return of NBBL is 94. This return is the average of capital gain yield and dividend yield.

The coefficient of correlation between loans and advance in private sector and portfolio return if joint venture banks come out to be $r_{xy} = -0.6$. Therefore it indicates that there is negative correlation between loans and advances in private sector and portfolio return of five JVBs in Nepal.

Sabita Shah, (2004) conducted her thesis entitled "Impact of interest rate structure on investment portfolio of commercial Banks in Nepal." The major findings of the study are as follow.

- The amount of deposit increased after liberalization but growth rate is average compared to before liberalization increased only by 0.44% Thus the deposit

had not increased more event after the existent of liberalization is due to declining deposit rates.

- The interest rate on saving deposit is less or more constant in five years before liberalization but it started to decline after liberalization. In the same way the fixed deposit rate also started to decline after liberalization. Thus the amt of deposit is declining. The lower rate of interest decrease deposit collection.
- Credit loan and advance is also influenced by the lending rates increment in lending rate decreases the growth percent of credit flow. In this analysis except agriculture and general use purpose sector the other sector growth rate is found to be increasing after liberalization despite the increase in lending rates. so it can be said that this increasing is only due to changing lending rates but also other factors i. e income, inflection competition which indirectly affect credit flow of commercial banks.
- Commercial Banks investment in government and other securities highly increased in the year of liberalization which is due to the lack of proper vitalization of collection resources. But it is started to decline after two years of liberalization and reached to negative point due to the higher rate and enough promising investment opportunities available in private sector.

Mainly (2005), has performed on other study entitled " Risk and return Analysis on common stock investment." In this study he has performed an analysis of risk and return on common stock investment with special reference to banking industry. In this study he writes, the main objective of the study is to determine whether the shares of selected commercial banks are over priced, under priced or correctly valued by analyzing the risk and return. His other objectives are evaluate the common stock, to analyze the risk and return and to provide relevant suggestion to concerned authority based on analysis of data. His major findings on his study are given below in details.

- Among the selected commercial banks he writes that the SCBNC has highest (i.e.32%)
- Market capitalization which indicates that the size of the stock market of SCBNC is greater one.
- Regarding the expected rate of return among the selected commercial banks. The highest expected rate of return of COI is 19.9% and lowest expected return on common stock of NBBC is - 27.99% . So it indicates that the investment in SBI will earn best return.
- Among the selected banks. The highest. c.v. on common stock of NABIL is 12.23 and to west c.v. common stock of SCBNC is 3.093, It indicates NABIL stock is more risky and SCBNC stock is less risk. Than other, similarly, bet coefficient of SBI is highest (i.e.3.30) and the NIBC has lowest bet coefficient (i.e. 0.5832). So it means c. s. of SBI is most aggressive stock c. s. of NID C is most defensive stock than other.

- At the last the writes at major finding of his study. That the collection between NIBL and SBI is in negative. It indicates making pert folio investment in these two stock .

Mrs. Manoj Kumar Chaudhary (2006), conducted a thesis entitled “A study on Investment Portfolio of listed Commercial Banks” The study is based on four commercial banks which are NABIL, NIBL, NSBL and EBL.

The main objectives of the study are:

- To analyze the risk and return of selected commercial banks on investment using portfolio concept.
- To analyze the investment portfolio of commercial banks.
- To forecast and examine the trend of investment and to provide complementary measures based on analysis.

Major finding:

This study is based on selected four commercial banks. This study is based on secondary data. It covers five years period from fiscal year 2001/02 to 2005/6.

This study has summarized the following measure findings:

- During the study period, return on share and debenture of CBs show wide fluctuation caused mainly due to volatility of share price in the market and change in dividend paid by CBs to some extent. NABIL has more return from government securities and loan and advances.
- From the various ratios NABIL is the bank which shows better performance on their investment strategy and successful in effective mobilization of its overall resources among four CBs. The profitability position of NABIL is the highest whereas NSBL has the weakest position.
- The portfolio returns is lower than loan and advance and share and debenture but more then government securities. The portfolio risk on investment is lower than the risk of loan and advance and share and debenture. The risk on government securities is less than risk of portfolio which shows that there is vital role of government securities for reduction risk.
- From the negative correlation coefficient between various investment assets i.e. government securities and loan and advance with share and debenture, the CBs can reduce total risk at minimum level and increase profit at higher level which are very useful to make portfolio combination to reduce risk.

- CBs are able to raise the volume of investment on loan and advances, government securities and share and debenture with the rise in the volume of total deposit over the study period.
- NABIL is almost successful bank among four CBs. EBL is also successful bank in utilization of resources. Both bank shows better performance in mobilization of funds. NIBL reflects moderate performance in utilization of funds. Comparatively, NSBL is the weakest bank to mobilize its funds in various investment assets.

2.4 Research Gap

Risk, Return and Portfolio are the most important part of Finance because they can strong impact on investment. Thus, it is not totally new concept. Many research hears have done researcher on this aspect. As long as researcher knows, no specific research has yet get been able to go in depth of the topic and has successfully accomplished the specified objectives of the research work. All of the previous research on this topic has been based on only showing the risk and return analysis of the stocks of commercial Banks. Hence, this research will fulfill the prevailing research gap by calculating the market price per share and dividend price per share, the portfolio risk and return and estimating the optimal portfolio among the listen commercial and Development Bank on the basis of all reinvent data and information off the latest five fiscal year of three, commercial Banks and three Development Banks. Further more the portfolio performance has also been evaluated with using Sharpe index of portfolio performance majors, which has not been calculated on other studies analysis of portfolio investment in the development bank of Nepal is the new topic for research.

CHAPTER-III

3. Research Methodology

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 data, facts in figures. Research methodology is a way for systematically solve the research problem. It refers to the various sequential steps that are to be adopting by a research during the course of studying the problem with certain objectives. This chapter refers to the overall research method from the theoretical aspects to the collection and analysis of data. This research tries to perform a well-designed quantities qualitative research in a very clear and direct way using both financial and statistical tools. Under this research design Population and sample, sample selection method, data collection and analysis techniques have been described on the basis of objective of the study is to analyze the portfolio analysis on investment of selected commercial banks and development banks. Detail research methods are describing in the following headings.

3.1 Research design:-

Research design is the plan, structure and strategy of investigations conceived which guides to study and provide ways for research viability. It is arrangement for collection and analysis of data. Research design is necessary to fulfill the objectives of this study, including historical research descriptive and analytical research design has been used. Some financial and statics tools have been applied to examine facts and descriptive techniques have been adopted. This study is base on recent five years historical data from the fiscal year 2005 to 2009. It is with common stock of commercial banks and development banks, which have listed their share in NEPSE to make them eligible for trading. Hence, it is a historical research. The common stocks under this study have been analyzed in a descriptive and analytical way. It is more analytical and empirical and less descriptive.

3.2 Population and Sample:-

Population of this study has been included all listed commercial and development banks in Nepal Stock Exchange. At present, there are 26 commercial banks and 58 development banks in Nepal. Up to chaitra 2066 However, only 23 commercial banks and 32 development banks have listed their shares in NEPSE for trading in secondary market up to 2066. They have only been considered as population for the study, 3 commercial banks and three development banks are selected as sample based on purposive sampling method. On the basis of establishment and data availability, samples are taken. The sample consists of three selected commercial banks and three selected development banks in these studies.

The sampled commercial and development banks are listed below.

Category	Population Size	Sample Size	Sampled Companies
Commercial Banks	23	3	1. NABIL Bank Limited 2. Nepal Investment Bank Limited 3. Himalayan Bank Limited
Development Banks	32	3	1. Ace Development Bank Ltd. 2. Nepal Development Bank Ltd 3. Development and Credit Bank

3.3 Sources of Data :-

Data have been obtained from secondary sources. The sources of secondary data are published data like annual report of concerned banks financial statement, newspaper journals, various books published annual reports of NEPSE, SEBO-N, NRB, internet and concerned banks. Especially the official website of NEPSE and SEBO-N become the main source of secondary data. The facilities available at central library and concerned agencies researcher used which have a wide range of related books journals and other publication.

3.4 Data collection Techniques :-

The researcher has been visited the different libraries, concerned banks, Nepal Rastra Bank NEPSE, SEBO-N and other several book stores and collected related publications and periodicals. Official websites were searched in order to collect required information. Furthermore, secondary data related to common stocks of concerned companies have been downloaded from the official website of NEPSE, <http://nepalstock.com>.

3.5 Data Analysis Tools :-

The data collected from various sources leads to the logical conclusion, only if the appropriate tools and techniques are adopted to analyze such data, The collected data has been no meaning, if such data are not analyzed. To analyze the data in this research, the researcher has used some statistical and financial tools, which are explained here. Under this study financial as well as statistical tools are used to analyze the gathered data and information.

3.5.1 Financial Tools

Financial tools are used for the analysis and interpretation of data. These tools are used to get the precise knowledge of financial analysis that is useful in exploring strengths and weakness of the investment policies and strategies. For the sake of analysis, following various financial tools are used to meet the objectives of the study.

a) Risk and Return Analysis of individual stocks

- **Dividend per Share (DPS):-**

Dividend per Share is calculated using the following model:-

$$\text{DPS} = \text{Cash Dividend} + \text{Stock Dividend}$$

$$\text{Cash equipment of stock dividend} = \text{SDR} \times \text{Next Year MPS}$$

Where SDR = Stock Dividend Ratio

- **Market Price of Share (MPS)**

Measure of the value of stock is market price of stock. It is denoted by MPS. Three Price records are available in Nepal Stock Exchange Limited namely- High, Low and Closing Price. For our study purpose closing price of the stocks are taken since our study focuses on annual data.

- **Return on Common Stock(R)**

Holding Period Return (HPR)

Single period return or holding period is the return obtained by the investors due to holding the stock period. Generally, it is represented by ‘R’ and expressed in term of percentage basis. It is calculated as:

$$HPR = \frac{\text{Ending Price} - \text{Beginning Price} + \text{Cash Receipts}}{\text{Beginning price}}$$

Symbolically,

$$HPR = \frac{P_t - P_{t-1} + D_1}{P_{t-1}}$$

Where, P_t =Price of the stock at time t
 P_{t-1} = Price of stock at time t-1
 D_1 =Dividend per share at time t

Expected/ Average Return of Common Stock (R)

When Probabilities of the returns are given, the weighted average rate is known as the expected rate of return, represented by E(R). However, when historical data are used, then the arithmetic mean of the returns is known as average return on common stock, Represented by \bar{R} It is used as proxy for expected rate of return. It can be calculate by dividing the total sum of return of certain period by no. of period. R. represents it. It is calculated as:

Average Rate of Return on j stock = $\frac{\text{Sum of returns of past year}}{\text{Number of years}}$

$$\text{Average Rate of Return } (\bar{R}) = \frac{\sum R_1}{n}$$

Where, $\sum R_1$ = Summation of annual return on stock
 n = Number of year of observation

- **Risk on Common Stock:-**

Stock returns may be riskier or volatile, but this concept is a difficult one to express simply. In finance, a concept from statistics standard deviation is borrowed to measure the risk on returns of investment. Standard deviation is a summary measure about the average speed of observations around the mean. It is the square root of the variance. The standard deviation and the variance are equally acceptable and conceptually equivalent quantitative measures of an asset's total risk. Risk on Common Stock is measured by the standard deviation. It is the square root of the variance. It is computed as:-

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

Where,

R = Rate of return on individual assets

\bar{R} = Average rate of return on individual assets

n = Number of year or observation

- **Coefficient of variation:-**

It is defined as the ratio of standard deviation to mean of expected return. It is used to standardize the risk per unit of return that is measure the risk per rupee. The coefficient of variation should be used to compare investments when both the standard deviations and the expected values differ. It is calculated as:

$$C.V = \frac{\sigma}{\bar{x}} \times 100$$

Where,

σ = Standard deviation of asset

\bar{x} = Mean value of returns

C.V. = Coefficient of variation

For analysis purpose, it is noted that low C.V represent low risk and high risk C.V represent high risk.

- **(b) Risk and Return Analysis of Market**

- **Return on Market**

Annual return of market is average return of market based on the index of market. R_m denotes it. Under this study, NEPSE index will be used. It is

a value of weight index and compromise of all the stocks listed in NEPSE. The NEPSE index is used for the study.

$$\underline{\text{Annual Market Return (R}_m)} = \frac{\text{Ending NPSE index} - \text{Beginning NEPSE index}}{\text{Beginning NEPSE index}}$$

$$\underline{\text{Average market Return}} (\bar{R}_m) = \frac{\sum R_m}{N}$$

Where:

(\bar{R}_m) = Summation of annual market return
 n = Number of observation

- **Risk of Market Return:-**

Risk of market is also measured by the Standard deviation of the return of market. The standard deviation of market returns is computed as.

$$\text{Standard Deviation} = (\sigma_m) = \sqrt{\frac{\sum (R_m - \bar{R}_m)^2}{n-1}}$$

C. Market Sensitivity Analysis

- **Covariance:-**

The covariance measure how two variables Co-Vary. It is a measure of absolute association between two variables. Here, how the returns of individual stocks and the market return co-vary will be measured by covariance between the return of individual stocks and market return. It is computed as:-

$$\text{COV}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j) (R_m - \bar{R}_m)}{n} = \rho_{jm} \sigma_j \sigma_m$$

If two variables are independent, their covariance is zero.

- **Correlation Coefficients:-**

Correlation Coefficient is a measure of the variable association between two variables. It describes how much Linear Co-movement exists between stock j and the market is computed as:

$$r_{j,m} = \frac{\text{Cov}(R_j, R_m)}{\sigma_j \sigma_m}$$

1. If correlation between stock j and market is positive, the returns on securities and market tend to be large and small at the same time.
2. If correlation between stock j and market is negative, relatively large return of security j is associated with relatively small return of market.
3. If correlation between stock j and market is zero, the return of security j is uncorrelated to the return on market. Movement on the return of security j appear unrelated to Moves in the return of market.

- **Beta**

Beta coefficient may be used for ranking the systematic risk of different assets. Beta Coefficient of stock j is denoted by B_j . It is functionally related to the correlation and the covariance between the security and the market portfolio. It is computed as:

$$B_{jm} = \frac{Cov(R_j, R_m)}{Var(R_m)}$$

Where $COV(R_j, R_m)$ = Covariance of returns of the j_{th} assets with the market.

$Var(R_m)$ = Variance of returns for the market portfolio

Individual stocks can be classified as aggressive or defensive or average on the basis of beta coefficients.

<u>Beta Coefficients</u>	<u>Stock classification</u>	<u>Degree of risk</u>
Less than 1	Defensive stock	Less risky than the market
Exactly 1	Average stock	Equally risky as the market
Greater than 1	Aggressive stock	More risky than the market

(d) Analysis of systematic and unsystematic risk

- **Systematic Risk:-**

Total risk of any individual stock can be measured by variance or standard deviation. The total risk can be portioned as [i] Systematic and [ii] Unsystematic risk. Systematic Risk is that portion of total risk caused by the market factors that simultaneously affect the prices of all securities and cannot be avoided or diversified. Systematic risk is market related risk. It is also called market risk or un-diversifiable risk. Un-diversifiable risk, market risk and beta risk are equally used terms. It is calculated as:

$$\text{Systematic Risk} = B_{jm}^2 \text{Var}(R_m)$$

Where , B_{jm} = Beta Coefficient of stock j with market return
 $Var(R_m)$ = Variance of market return

The percentage of systematic risk is measured by the coefficient of determination. It is also the square of correlation coefficient of return of stock with market.

$$\text{Proportion of systematic Risk} = \frac{\text{Systematic Risk}}{\text{Total Risk}}$$

$$\frac{B_{jm}^2 \text{Var}(R_m)}{\text{Var}(R_j)} = \frac{B_{jm}^2 \sigma_m^2}{\sigma_j^2} = \rho_{jm}^2$$

• **Unsystematic Risk:-**

Unsystematic Risk is non-market related risk. It is that portion of total risk of an individual stock that can be diversified away. It is also called diversifiable risk, company specific risk. It is calculated as:

$$\begin{aligned} \text{Unsystematic Risk} &= \text{Total Risk} - \text{Systematic Risk} \\ &= \text{Var}(R_j) - B_{jm}^2 \text{Var}(R_m) \\ &= \sigma_j^2 - \beta_{jm}^2 \sigma_m^2 \end{aligned}$$

e. Profit Analysis:-

• **Profit Return**

The expected return on a portfolios is the simple weighted average of the expected return from the investment represented by a portfolios. In a two asset portfolios, the expected return of a portfolio \bar{R}_p , is calculated as:

$$\text{Expert Portfolio Return, } \bar{R}_p = W_1 \bar{R}_1 + W_2 \bar{R}_2$$

Where,

\bar{R}_p = the expected return on the portfolio

\bar{R}_1 = the expected return on the stock 1

\bar{R}_2 = the expected return on the stock 2

W_1 = the weight of investment in stock 1

W_2 = the weight of investment in stock 2

Simply, Expected Return on more than two assets portfolio;

$$\bar{R}_p = W_1 \bar{R}_1 + W_2 \bar{R}_2 + W_3 \bar{R}_3 + \dots \dots \dots W_n \bar{R}_n$$

• **Portfolio Risk**

Total Portfolio risk is measured by a statistical tool standard deviation and Variance of the portfolio's rate of return distribution. It is a function of the proportions invested in the components and correlation of return on the components securities. This risk is computed by using the following equations:-

$$\sigma_p = \sqrt{\sum_{j=1}^n \sum_{i=1}^n W_i W_j P_{ij} \sigma_i \sigma_j}$$

$$\sigma_p = \sqrt{\sum_{j=1}^n \sum_{i=1}^n W_i W_j \text{Cov}_{ij}}$$

Again, risk is also calculated by variance

$$\sigma_p^2 = \sum_{j=1}^n \sum_{i=1}^n W_i W_j P_{ij} \sigma_i \sigma_j$$

OR

$$\sigma_p^2 = \sum_{j=1}^n \sum_{i=1}^n W_i W_j \text{Cov}_{ij}$$

Where,

W_i = Proportion of investment in Asset i

W_j = Proportion of investment in Asset J

σ_p = Standard deviation of portfolio's return

Cov_{ij} = Covariance of return between assets i and j.

P_{ij} = Correlation coefficient between asset i and j.

Alternatively, the risk i.e. standard deviation and variance can be calculated as follows:

For Two assets portfolio,

$$\sigma_p = \sqrt{W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1 W_2 P_{12} \sigma_1 \sigma_2}$$

OR

$$\sigma_p = \sqrt{W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1 W_2 \text{Cov}_{1,2}}$$

Variance is calculated as,

$$\sigma_p^2 = W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1 W_2 P_{12} \sigma_1 \sigma_2$$

OR

$$\sigma_p^2 = W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1 W_2 \text{Cov}_{1,2}$$

For three assets Portfolio

Standard Deviation, σ_p =

$$\sqrt{W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + W_3^2 \sigma_3^2 + 2W_1 W_2 P_{1,2} \sigma_1 \sigma_2 + 2W_2 W_3 P_{2,3} \sigma_2 \sigma_3 + 2W_1 W_3 P_{1,2} \sigma_1 \sigma_3}$$

OR

$$\sigma_p = \sqrt{W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + W_3^2 \sigma_3^2 + 2W_1 W_2 \text{Cov}_{1,2} + 2W_2 W_3 \text{Cov}_{2,3} + 2W_1 W_3 \text{Cov}_{1,2}}$$

Variance,

$$\sigma_p^2 = W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + W_3^2 \sigma_3^2 + 2W_1 W_2 P_{1,2} \sigma_1 \sigma_2 + 2W_2 W_3 P_{2,3} \sigma_2 \sigma_3 + 2W_1 W_3 P_{1,2} \sigma_1 \sigma_3$$

Or

$$W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + W_3^2 \sigma_3^2 + 2W_1 W_2 \text{Cov}_{1,2} + 2W_2 W_3 \text{Cov}_{2,3} + 2W_1 W_3 \text{Cov}_{1,3}$$

Where,

- σ_p = Standard Deviation of Portfolio's return
- σ_p^2 = Variance of Portfolio return
- W_1 = Proportion of investment in asset 1.
- W_2 = Proportion of investment in asset 2
- W_3 = Proportion of investment in asset 3
- σ_1 = Standard Deviation of returns on asset 1
- σ_2 = Standard Deviation of returns on asset 2
- σ_3 = Standard Deviation of returns on asset 3
- $\text{Cov}_{1,2}$ = Covariance of returns between assets. 1 & 2
- $\text{Cov}_{2,3}$ = Covariance of returns between assets 2 & 3
- $\text{Cov}_{1,3}$ = Covariance of returns between assets 1 & 3
- $P_{1,2}$ = Correlation coefficient between asset 1 & 2
- $P_{2,3}$ = Correlation coefficient between asset 2 & 3
- $P_{1,3}$ = Correlation Coefficient between asset 1 & 3

Capital Asset Pricing Model (CAPM)

Assets with high degree of systematic risk must be priced to yield high rate of return in order to induce investors to accept high degree of risk that are undiversifiable within that market. Hence CAPM illustrates the positive relation between assets' systematic risk and their expected rates of return. CAPM is also called security market line (SML). The SML equation is as.

$$K_j = R_f + (R_m - R_f) \beta_j$$

Where,

K_j = Required rate of return on security j

R_f = Risk free rate of return (Government Security)

R_m = Return on market i.e. on risky assets
 β_j = Beta coefficient of security j (systematic risk index of security j)

f. Sharpe's portfolio performance Measure

William F. Sharpe devised an index to assess the portfolio performance by considering both the risk and return of any portfolio simultaneously. The Sharpe index of portfolio performance is calculated as:

$$S_j = \frac{\text{Risk Premium}}{\text{Total Risk}}$$

$$= \frac{\bar{R}_j - R_f}{\sigma_j}$$

Where,

S_j = Sharpe's index of portfolio performance
 \bar{R} = Average return from Portfolio j
 R_f = Risk free rate of return
 σ_j = Standard deviation of returns for portfolio j

3.5.2 Statistical Tools

Except the financial tools, some statistical tools are also used in this research work. The major statistical tools used in this research are

a) Hypothesis Testing

To test the Hypothesis, t-test has been employed. Under null hypothesis (Ho), t-test statistic is:

$$T = \frac{\bar{X} - u}{S / \sqrt{n}}$$

Where,

\bar{X} = Average return of the common stock of sample under study
 u = Average market return (assumed as population)
 s = Sample standard deviation
 n = Number of Observation

3.6 Research Hypothesis

In order to achieve the set objective, following hypothesis are set for testing :

3.6.1 Return Characteristics

For Commercial Banks;

Null Hypothesis (Ho):

$\bar{R}_j = \mu$ i.e. There is no significant difference between the return of population and sample i.e. Average return of common stock of listed commercial banks is equal to marker (NEPSE commercial Banking Index)

Alternative Hypothesis (H_A): $\bar{R}_1 \neq \mu$ i.e. There is significant difference between the return of population and sample i.e. average return of common stock of listed commercial banks is not equal to market (NEPSE Commercial Banking Index)

For Development Banks:

Null Hypothesis (H_o): $\bar{R}_1 \neq \mu$ i.e. There is significant difference between the return of population and sample i.e. average return of common stock of listed Development banks is not equal to market (NEPSE Commercial Banking Index)

Alternative Hypothesis (H_A): $\bar{R}_1 \neq \mu$ i.e. There is significant difference between the return of population and sample i.e. average return of common stock of listed Development banks is not equal to market (NEPSE Commercial Banking Index)

3.6.2 Risk Characteristics

For Commercial Banks;

Null Hypothesis (Ho): $\beta_j = 1$ i.e. There is no significant difference between the systematic risk of population and sample i.e. The portfolio beta (Systematic risk) of common stock of listed commercial banks is equal to marker NEPSE (The market beta is always 1)

Alternative Hypothesis (H_A): $\beta_j = 1$ i.e. There is no significant difference between the systematic risk of population and sample i.e. The portfolio beta (Systematic risk) of common stock of listed commercial banks is equal to marker (NEPSE)

For Development Banks;

Null Hypothesis (Ho): $\beta_j = 1$ i.e. There is no significant difference between the systematic risk of population and sample i.e. The portfolio beta (Systematic risk) of common stock of listed Development Banks is equal to marker (NEPSE)

Alternative Hypothesis (H_A): $\beta_j = 1$ i.e. There is no significant difference between the systematic risk of population and sample i.e. The portfolio beta (Systematic risk) of common stock of listed Development Banks is equal to marker (NEPSE)

The set hypothesis have been tested on 5% level if significance ($\alpha = 5\%$)

3.7 Limitations of the Methodology

Each methodology suffers from some kind of limitations. Therefore, the methodology deployed in this research can not be different from the common limitations of same type of thesis. However, in analyzing portfolio risk and return of the selected samples, the tools applied cannot best describe the relationships between the variables under study since portfolio analysis tools are based on various assumptions. In selecting samples, purposive and judgmental sampling method has adapted. The samples, for secondary data collection were selected based on high volume traded in NEPSE and the availability of published data. Likewise only three commercial banks and three-development bank were taken as sample.

CHAPTER-IV

4. Presentation and Analysis of Data

In this chapter, the data have been analyzed and interpreted using financial tools. In this course of analysis, data gathered from the various sources have been inserted in the tabular form according to their homogeneous nature. This chapter is concerned with presentation and analysis of the return and risk characteristics of common stock of the commercial and development banks respectively. Logically, the chapter is divided into two sections. They are analysis of secondary data and major findings of the study. Risk return characteristics of common stocks of listed commercial banks and development banks have been analyzed and interpreted on the basis of secondary data. Risk-return characteristics of the two and three assets portfolio have also been analyzed. Tables, diagrams and charts have been depicted the information precisely where necessary.

4.1 Presentation and Analysis of secondary Data

Risk and return characteristics on the common stocks of individual companies, systematic and unsystematic risk, market sensitivity of the stocks, expected rate of return required, two assets and three assets portfolio return and risk have been analyzed in this section. Furthermore, the portfolio performance has also been evaluated using Sharpe index of portfolio performance measure.

4.1.1 Market price per share and dividend per share of common stock.

Commercial Banks

The data of market price per share and dividend per share are presented in following table.

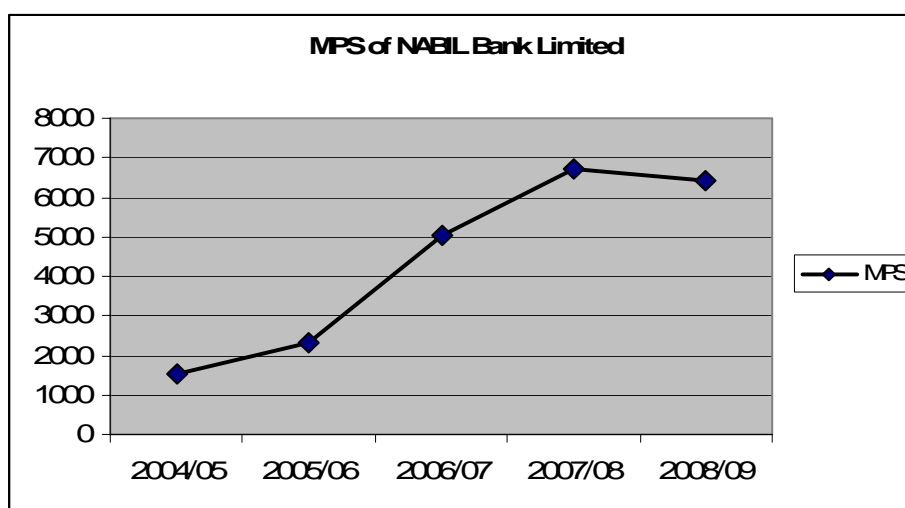
Table 4.1.1.: MPS and DPS of NABIL Bank Limited

<i>F/Y</i>	<i>Market Price Per Share</i>			<i>Dividend per share</i>			<i>Remark</i>
	<i>High</i>	<i>Low</i>	<i>Closing</i>	<i>Cash</i>	<i>Stock</i>	<i>Total</i>	
2004/05	1515	1000	1505	70	-	70	
2005/06	2300	1500	2240	85	-	85	
2006/07	5050	2025	5050	100	40	140	
2007/08	6700	3410	5275	60	40	100	
2008/09	6400	3050	4899	35	50	85	

Stock dividend Amount = Stock Dividend Ratio X Next year's MPS.

The Market Price of the stock of the bank can be shown in graph as follows:

Figure 4.1.1: MPS of NABIL Bank Limited



Above graph shape that the MPS of NABIL bank is increasing trend up to fiscal year 2007/8. It is maximum in fiscal year 2007/8 i.e. 5275. It is seen that the market price of the bank is in decreasing trend since 2007/8. It was decreased in fiscal year 2008/9 i.e. 4899.

At first DPS of the bank is also in increasing trend. It is to maximum at in fiscal year 2006/7. Due to the conversion of stock dividend into cash, it seems so high. Up to this period the bank has continuously provided the cash dividend. So the investor who needs regular income can invest in this stock up to fiscal year 2006/7. After this year the bank has provided dividend in decreasing trend up to fiscal year 2007/8 and 2008/9 because of the cash dividend is Rs.60 and 35 in fiscal year 2007/8 and 2008/9 respectively.

Table 4.1.2.: MPS and DPS of Nepal Investment Bank Limited.

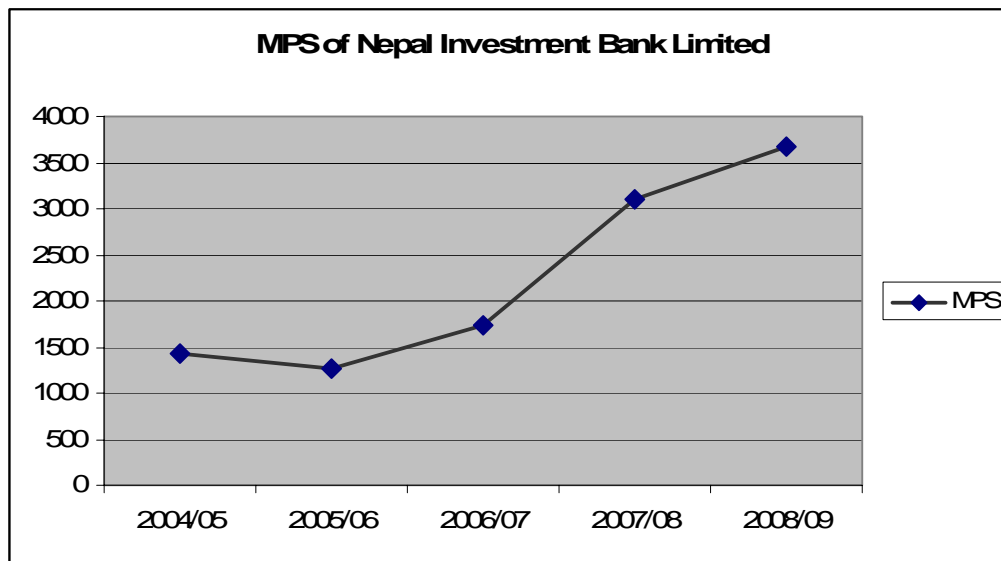
F/Y	Market Price Per Share			Dividend per share			Remark
	High	Low	Closing	Cash	Stock	Total	
2004/05	1430	760	800	12.58	-	12.58	
2005/06	1265	762	1260	20	35.46	55.46	
2006/07	1729	1000	1729	5	25	30	
2007/08	3101	1305	2450	7.50	33.33	40.83	
2008/09	3670	990	1388	-	-	-	

Stock dividend amount = stock dividend Ratio X Next years MPS.

The table 4.1.2 shows that the market price of stock of the bank is highly in increasing trend up to fiscal year 2007/8 attaining the maximum price i.e. 2450 in fiscal year 2007/8. It is seen that the market price of the stock was decrease in fiscal year 2008/9 i.e.1388.

The bank has provided dividend in increasing/decreasing trend up to fiscal year 2007/8. It is seen that there was not any dividend provided in fiscal year 2008/9. The market price of the stock of the bank can be shown in graph as follow:-

Figure: 4.1.2. MPS of Nepal Investment Bank Limited



The graph 4.1.2 shows that the Market price of the stock of bank is in increasing trend up to fiscal year 2007/8. However it was decreased in fiscal year 2008/9. It is maximum in fiscal year 2007/8 i.e. 2450

Table: 4.1.3 MPS and DPS of Himalayan Bank Limited

F/Y	Market Price Per Share			Dividend per share			Remark
	High	Low	Closing	Cash	Stock	Total	
2004/05	1181	855	920	11.58	20	31.58	
2005/06	1200	900	1100	30	5	35	
2006/07	1760	950	1740	15	25	40	
2007/08	2856	1340	1980	25	20	45	
2008/09	2730	119	1760	12	31.56	43.56	

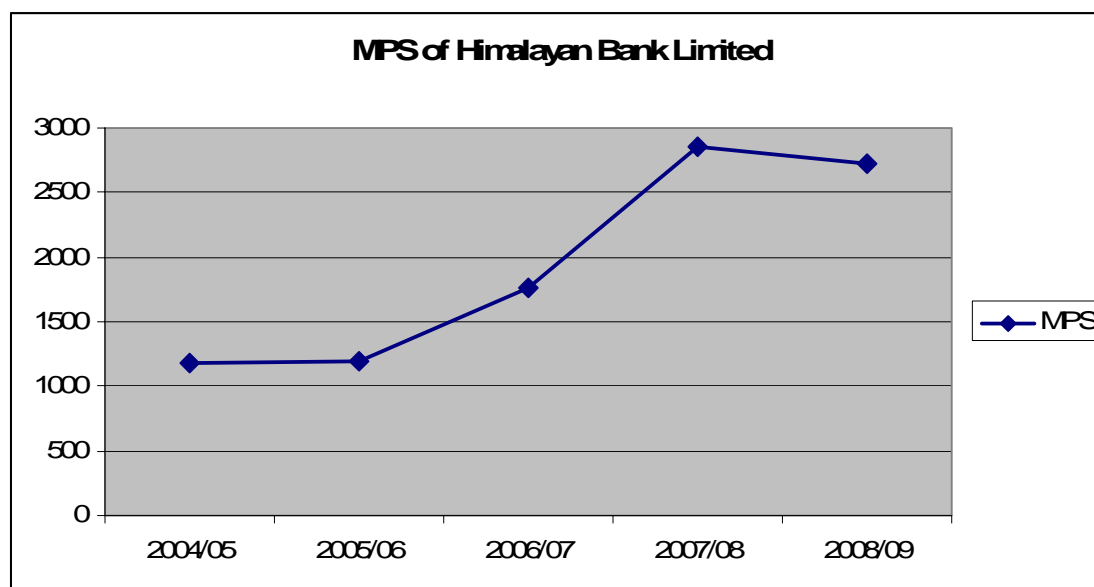
Stock dividend amount = stock dividend Ratio X Next years MPS.

The graph 4.1.3 shows that market price of the stock of the bank is slightly in increasing trend up to fiscal year 2005/6 and it is highly steep in fiscal year 2006/7 and 2007/8 attending the maximum price i.e.1980 in fiscal year 2007/8. It is seen that the market price of the stock decrease in fiscal year 2008/9 i.e.1760.

The bank has continuously provided the cash dividend and stock dividend.

The Market price of the stock of the bank can be shown in graph as follows:-

Figure 4.1.3 MPS of Himalayan Bank Limited



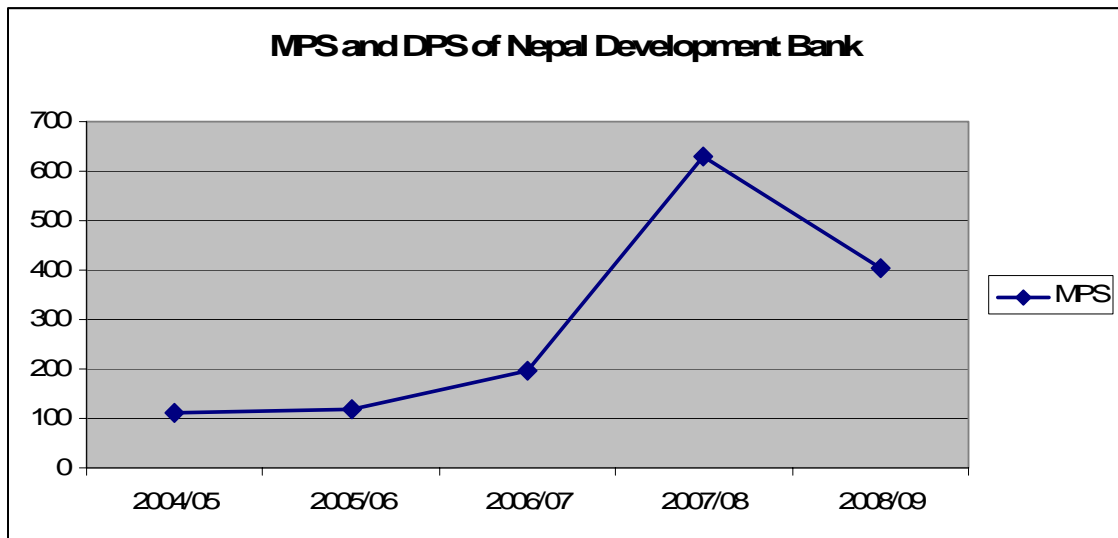
Development Bank

Table 4.1.4 MPS and DPS of Nepal Development Bank

F/Y	Market Price Per Share			Dividend per share			Remark
	High	Low	Closing	Cash	Stock	Total	
2004/05	111	87	88	-	-	-	
2005/06	120	80	102	-	-	-	
2006/07	198	100	153	-	-	-	
2007/08	628	153	302	-	-	-	
2008/09	405	100	126	-	-	-	

Stock dividend Amount: Stock dividend Ratio X Next Years MPS.

The Market Price of the stock of the bank can be shown in graph as follows:



It is seen that the market price of the bank is in increasing trend up to fiscal year 2007/8 and decrease in 2008/09.

The bank has provided neither cash dividend nor stock dividend by the inspection of the performance of the bank on the basis of market price and dividend of the bank's the investors are suggestive not to invest in this stock.

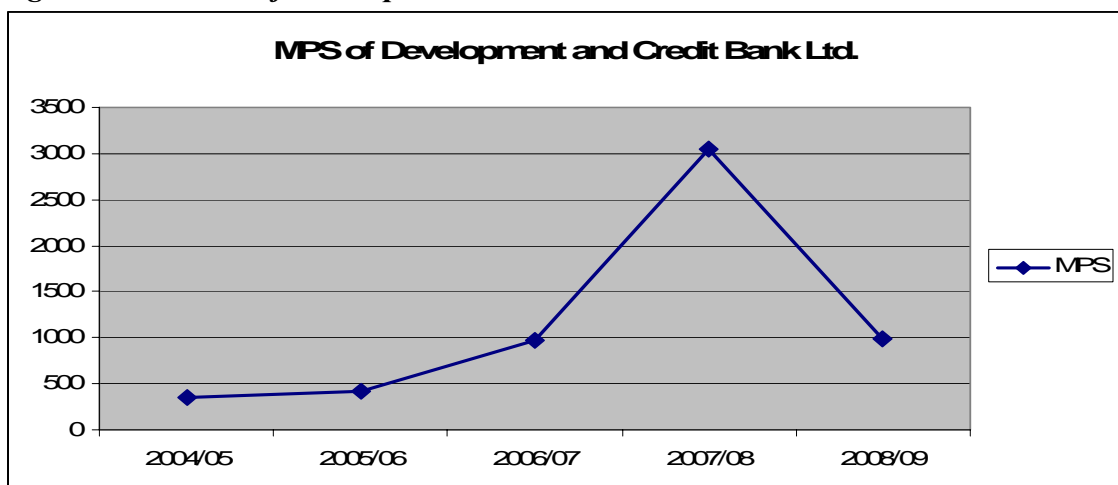
Table: 4.1.5 MPS and DPS of Development and Credit Bank Ltd.

F/Y	Market Price Per Share			Dividend per share			Remark
	High	Low	Closing	Cash	Stock	Total	
2004/05	360	167	305	12.63	-	12.63	
2005/06	420	240	390	0.63	12	12.63	
2006/07	970	367	800	0.63	12	12.63	
2007/08	3055	560	855	-	-	-	
2008/09	992	345	460	0.26	5	5.26	

Stock dividend Amount = Stock dividend Ratio X Next years MPS.

The Market Price of the stock of the bank can be shown in graph as follows.

Figure: 4.1.5 MPS of Development and Credit Bank Ltd.



The market price of the bank is in increasing trend up to the fiscal year 2007/8. The maximum market price per share of the stock of the bank is Rs.855 which is in the fiscal year 2007/8. It is seen that it was decreased in fiscal year 2008/9 i.e.460.

The bank has provided cash dividend Rs.12.63 in fiscal year 2004/5. After this year the bank has provided cash dividend in decreasing trend up to fiscal year 2008/9. The bank has continuously provided the cash dividend with stock dividend except in fiscal year 2007/8.

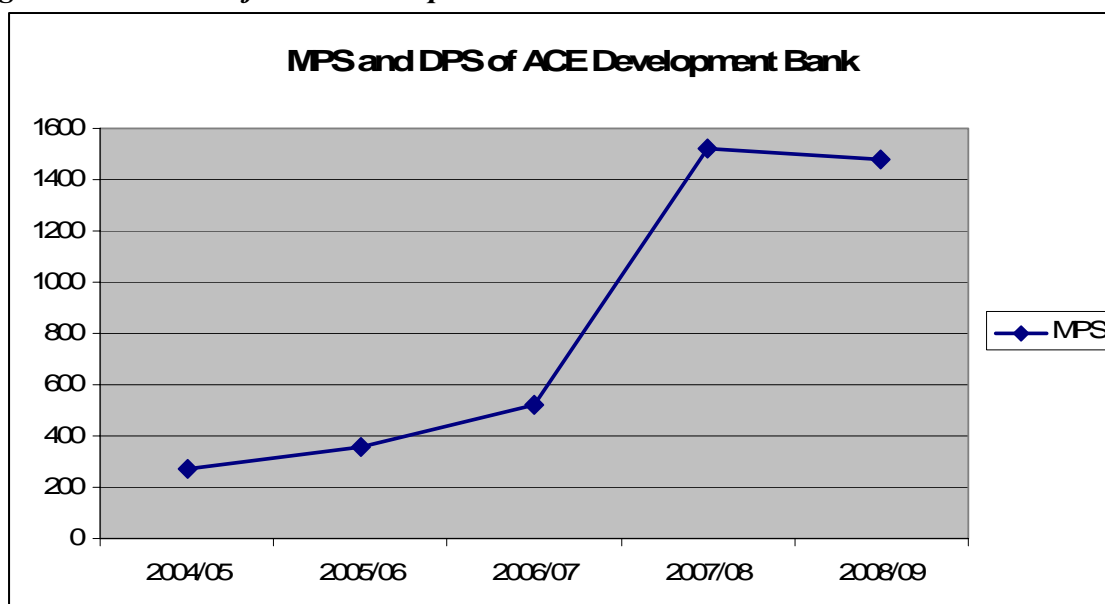
Table 4.1.6 MPS and DPS of ACE Development Bank

F/Y	Market Price Per Share			Dividend per share			Remark
	High	Low	Closing	Cash	Stock	Total	
2004/05	270	173	251	-	-	-	
2005/06	355	250	320	2.11	40	42.11	
2006/07	525	320	459	5.26	-	5.26	
2007/08	1519	500	856	0.53	10	10.53	
2008/09	1476	465	588	-	-	-	

Stock dividend Amount = Stock dividend Ratio X Next Years MPS.

The Market Price of the Stock of the bank can be shown in graph as follows:

Figure: 4.1.6 MPS of ACE Development Bank



The market price of the stock of the bank was in increasing trend up to the fiscal year 2007/8. The stock price attains its maximum value i.e. Rs.856 in the fiscal year 2007/8. It is seen that it was decreased in fiscal year 2008/9 i.e. 588.

The bank had provided the cash dividend in fiscal year 2005/06, 2006/07 and 2007/8. It had also provided the stock dividend in fiscal year 2005/6 and 2007/8.

4.1.2 Risk and return of Common Stocks.

The return on common stock is the percentage increase/decrease in share price and any cash receipts such as dividends over a specific period of time. Here, one year holding period returns R_1 are calculated.

The risk is the possibility that the actual return from holding a stock may deviate from the expected rate of return. It is measured by variance or standard deviation of return.

Commercial Banks

Average rate of return, variance of return, standard deviations and coefficient of variation are presented at Table 4.1.7, the calculations are shown in.

Return on Common Stock (R)

$$\text{Holding Period Return (HPR)} = \frac{P_t - P_{t-1} + D_1}{P_{t-1}}$$

Where,

P_t = Price of the stock at time t.

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

D_t = Dividend per share at time t

Expected / Average Return of Common Stock

$$\bar{R} = \frac{\sum R_i}{n}$$

$$\text{Var}(R_i) = \frac{\sum (R_j - \bar{R})^2}{n}$$

$$\text{Risk of common stock } (\sigma_i) = \sqrt{\frac{\sum (R_i - \bar{R}_j)^2}{n}}$$

$$\text{Coefficient of variance (C.V.)} = \frac{\sigma}{\bar{R}} \times 100\%$$

Table: 4.1.7 Average Rate of Return, Variance, S.D. and C.V. of commercial Banks

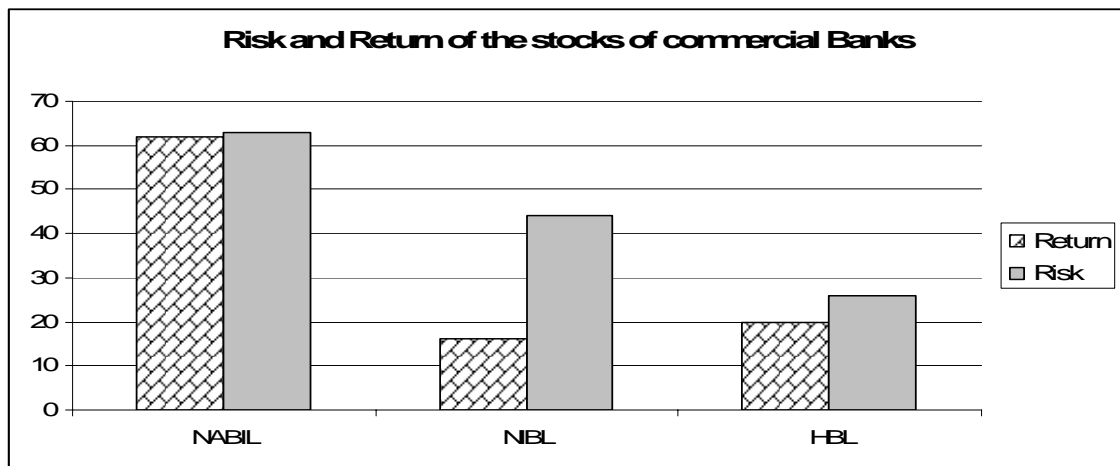
<i>Commercial Banks</i>	\bar{R}_i	$\text{Var}(R_i)$	σ_i	<i>C.V.</i>
NABIL	61.788	3877.72	62.27	1.008
NIBL	15.97	1917.405	43.79	2.74
HBL	19.6	651.96	25.53	1.303

The statistical results imply that over the period, the share of NABIL offers the highest average rate of return where as the share of NIBL offers the lowest average rate of return. The different shares have different rate of return, the share of NABIL seems to be the best for investment. Considering the overall market, however, the shares of all the commercials banks are attractive for investment.

Analyzing the return characteristics separately will mislead the investment decision. Each and every return carries an uncertainty or risk. Risk can explain the variability of return from its central tendency. The risk is measured by the standard deviation of the returns. Observing the standard deviation of returns of individual banks NABIL has the highest i.e. 62.27%, NIBL and HBL have standard deviation of 43.79% and 25.53% respectively. HBL has the lowest risk among all. Considering above all HBL provides higher returns with lowest risk among all commercial banks under study. Hence investors are suggested to invest in HBL stock.

However, the average rates of return are not the same and in such a situation, standard deviation may not provide a meaningful basis for measuring risk, so the decision based on risk and return separately can not be taken as rational. So coefficient of variation can deposit the exact position of risk per unit of return lower CV is preferable. The CV of NABIL is 1.008, HBL is 1.303 and NIBL is 2.74. It seems that the CV i.e. risk per unit of return of NIBL is highest and of NABIL is the lowest among all. It seems that one percent increase in return of NABIL causes 1.008% increase in risk. Likewise, for 1% increase in the return of the stocks of HBL and NIBL, the investors should assume 1.303% and 2.74% risks respectively. On the basis of CV, the common stocks of NABIL seem attractive among all. The stocks of HBL seem more attractive than that of NIBL. . The rates of return and risk are depicted in figure 4.1.7.

Figure: 4.1.7 Risk and Return of the stocks of commercial Banks.



Development Banks

Average rates of return, variance of return, standard deviation and coefficient of variation are presented in table 4.1.8

Table: 4.1.8. Average rate of return, Variance, SD and CV of Development banks

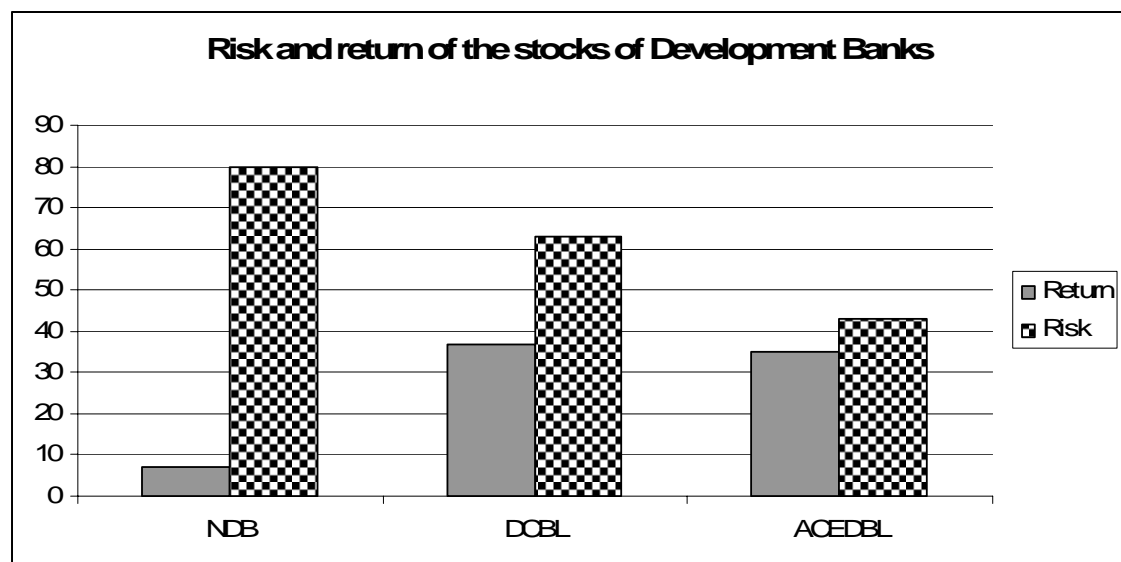
<i>Commercial Banks</i>	\bar{R}_i	$Var(R_i)$	σ_i	<i>C.V.</i>
NDB	6.91	6335.28	79.59	11.52
DCBL	36.86	3849.63	62.045	1.68
ACEDBL	34.76	1827.053	42.744	1.230

Form the statistical results of different Development banks, it has been observed that the stock of DCB has highest average rate of return i.e. 36.86% and NDB has the lowest average rate of return i.e. 6.91% in terms of average rate of return. The different share have different rate of return. The share of DCBL seems to be the best for investment. A rational investor chooses the stock of DCB. Furthermore, analyzing the risk characteristics, the NDB has the highest standard deviation i.e. 79.59% and ACEDBL has the lowest standard deviation i.e. 42.744%.

However, the decision taken on the basis of risk separately is not a rational decision. Coefficient of variation (the ratio between risk and return) is the best measure to make investment decision. It gives the exact situation of risk per unit or return. Here, risk per unit of return of ACEDBL is the lowest among all i.e.1.230 whereas of NDB has the highest i.e. 11.52 and DCB has higher i.e. 1.68. On the basis of CV, the common stock of ACEDB is attractive among all. NDB has lowest return and highest risk. So the investors are suggested not to invest in NDB banks.

The rates of return and the risk are depicted in figure 4.1.8

Figure 4.1.8 Risk and return of the stocks of Development Banks



4.1.3 Market Risk and Return

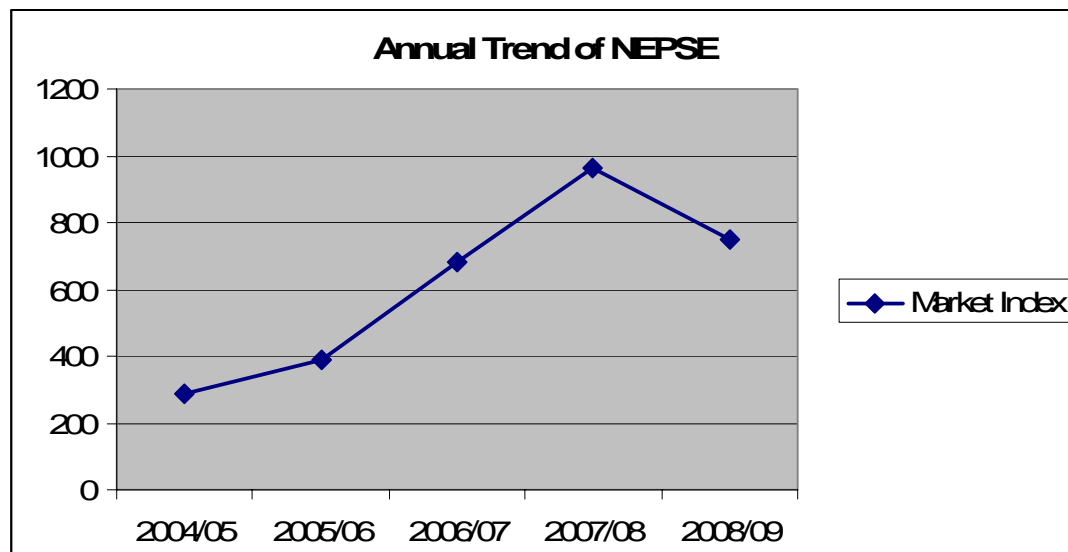
Nepal Stock Exchange Limited (shortly called as NEPSE) is the only second market of Nepal. Hence, index represents the market. Market return is calculated on the basis of NEPSE index. The market index of last five years and annual rate of returns are presented in Table 4.1.9, Figure 4.1.9

Table 4.1.9: Annual Trend of NEPSE

Fiscal Year	2004/05	2005/06	2006/07	2007/08	2008/09
Market Index	286.67	386.63	683.95	963.36	749.10
Annual Return	29.11	34.94	76.81	40.85	-22.24

The figure 4.1.9 shows the annual trend of NEPSE

Figure 4.1.9: Annual Trend of NEPSE



The above graph shows that, the annual trend of NEPSE index. The table 4.1.9 shows that the market index is an increasing trend up to 2007/8. It is slightly increase up to the fiscal year 2005/6. After 2005/6 it is very highly increasing up to fiscal year 2007/8. However it was decrease in fiscal year 2008/9. It is maximum in fiscal year 2007/9 i.e. 963.36.

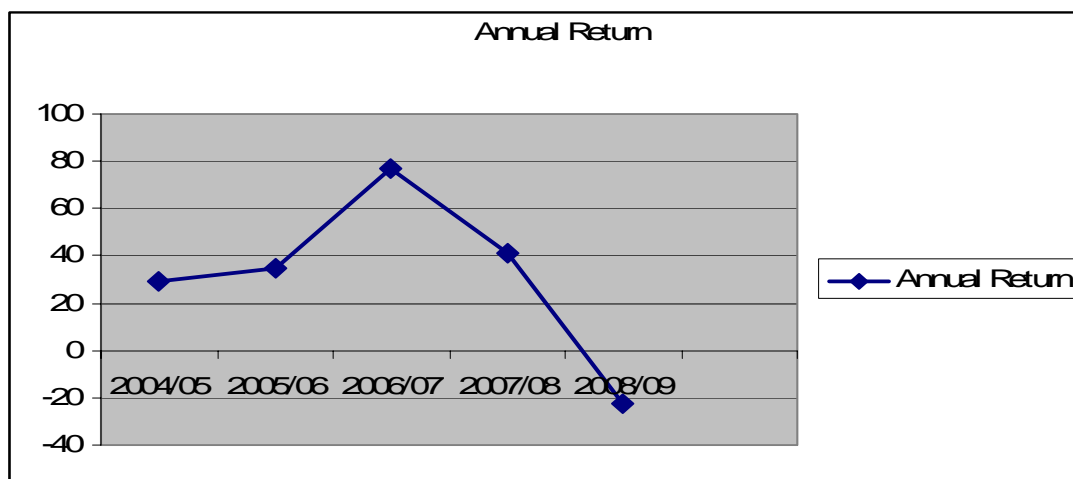
The annual return is also increasing trend up to the fiscal year 2006/7. But it is in decreasing trend after the fiscal year 2006/7. The market returns in the fiscal year 2008/9 is negative. It is maximum in the fiscal year 2006/7 i.e. 76.81%.

The above graph shows that the NEPSE index is in increasing trend. The slop of incremental is slightly up ward up to the fiscal year 2005/6. The slop is very high

the fiscal year 2006/7 and 2007/8. The maximum market index is 963.36 on, the fiscal year 2007/8. The graph shows that it is downward since to the fiscal year 2007/8.

The figure 4.1.9 [a] shows Annual Rate of Return of Market

Figure 4.1.9[a] Annual Rate of Return of Market



The above graph shows that the market return is in increasing trend. The slope of market return is slightly upwards up to the fiscal year 2005/06. The slope is very high in the fiscal year 2006/07. It seems that it is downward since to the fiscal year 2006/07. The market return in the fiscal year 2008/09 is negative.

Average rate of returns; variance and standard deviation of the market and coefficient of variation of over all market commercial banking index and development banking index have been shown in the table No 4.1.10

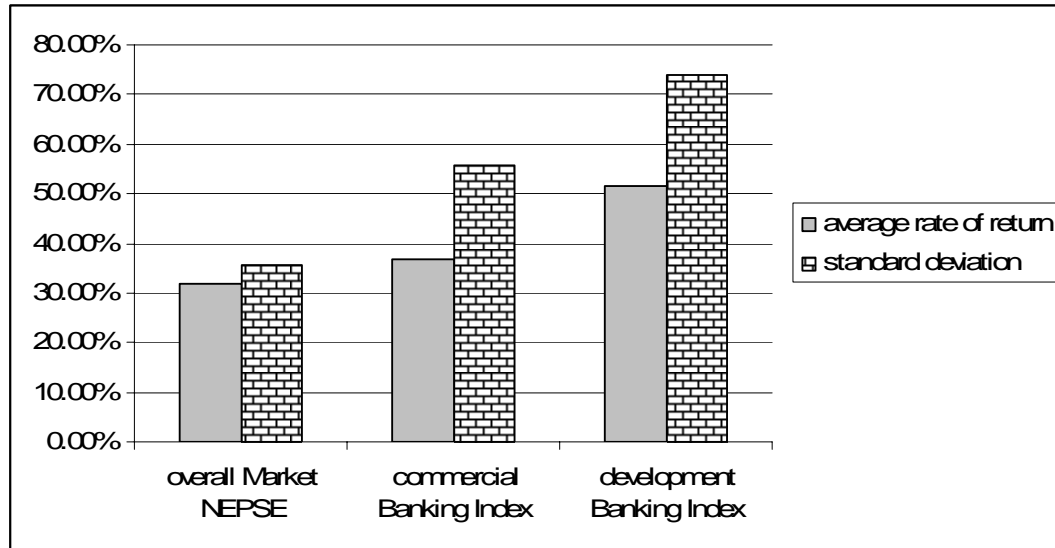
Table: 4.1.10 average rate of returns, variance standard deviation and coefficient of variation of overall market commercial banking Index and Development Banking Index.

	average rate of return	variance	standard deviation	C.V.
overall Market NEPSE	31.81%	1261.29	35.51%	1.113
commercial Banking Index	36.96%	3114.83	55.81%	1.51
development Banking Index	51.45%	5473.044	73.98%	1.44

Source:-NEPSE

Risk and return of NEPSE, commercial bank and Development bank depicted in figure 4.1.10

Figure 4.1.10 Risk and Return of NEPSE commercial Bank and Development Bank



From the above table and figure .It is seen that the return on market i.e., NEPSE on commercial bank and development bank are 31.89% 36.96% and 51.45% respectively .Like wise ,the risk on corresponding markets are 35.51%, 55.81% and 73.98 % respectively. The data shows that development bank provide the maximum returns and risk .The NEPSE have minimum return and risk.

On the basic have C.V. of i.e. 1.113% so, it possesses the least risk for per unite of return. The development banks and the commercial banks have the C.V. Of 1.44% and 1.51.respectively.On the basis of C.V. the development banks have less C.V. than the commercial banks. Taking support of above data, investors are suggested to invest in development banks than the commercial banks.

4.1.11. Market Sensitivity of Stocks.

covariance measures how the returns on commons stocks of individual companies and market co vary .It measures the absolute association between two variances .like wise ,the correlation coefficient measures the relative association between two variables The correlation between two variables can be within the unite of +1 to - 1.

The variability of a security's return within the return of the overall market say NEPSE return is called systematic risk and such type of risk can't be diversified. It is an avoided risk and is measured by beta coefficient Beta depicts the sensitivity of the security's excess returns to that of the market portfolio. The market sensitivity of the stocks is depicted in table and figure below.

Commercial Banks

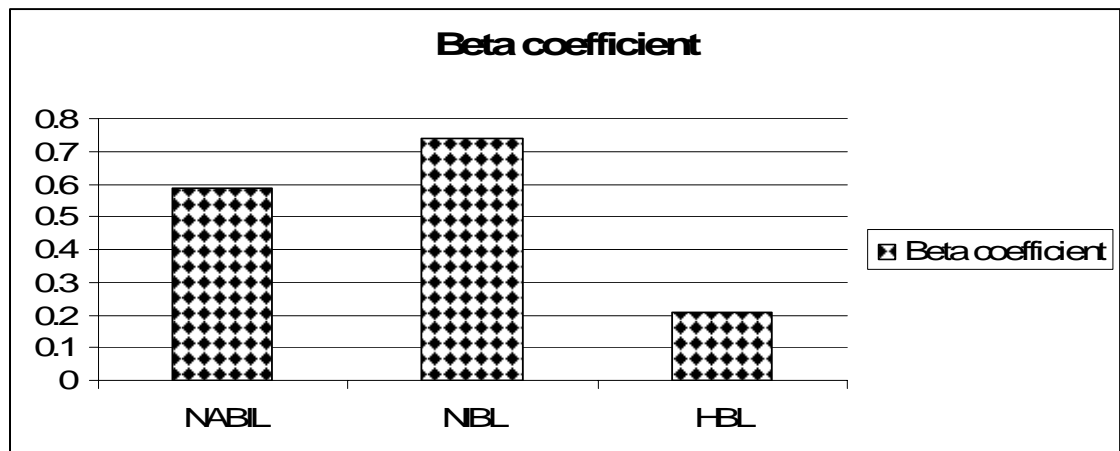
The calculated covariance, correlation and beta coefficients of the stocks of commercial banks are presented in table 4.1.11 and figure 4.1.11.

Table 4.1.11. Correlation Coefficient, Covariance and Beta Coefficient of Commercial Banks

commercial Banks	correlation coefficient(ρ_m)	covariance (COV_{im})	Beta coefficient(β_{im})
NABIL	0.336	743.87	0.5893
NIBL	0.598	929.658	0.7371
HBL	0.286	259.479	0.2057

From the results presented on above table correlation coefficient of NABIL, NIBL and HBL are 0.336, 0.598 and 0.286 respectively. The returns of these banks are positively correlated. Hence portfolio on such stock with market can't reduce risk market on the basis of correlation; the investors are suggested to market the portfolio of stock of HBL with market. Covariance of the returns of NABIL, NIBL and HBL are 743.87, 929.658 and 259.479 respectively. As covariance between two variables measures the absolute association, these are the highest absolute association between the returns of NIBL and the market. Similarly HBL has the lowest absolute association with market.

Figure 4.1.11. Correlation, Coefficient, Covariance and Beta coefficient of Commercial Banks



From figure 4.1.11 by observing the individual stocks beta coefficient, the stock of NABIL, NIBL and HBL are 0.5893, 0.7371 and 0.2057 respectively. The beta coefficient of NIBL is seen highly than other. The beta coefficient of NABIL, NIBL and HBL are less than 1. So these stocks are defensive since there is less than 1. The stock of NABIL, NIBL and HBL are less risky than the market.

Development Banks

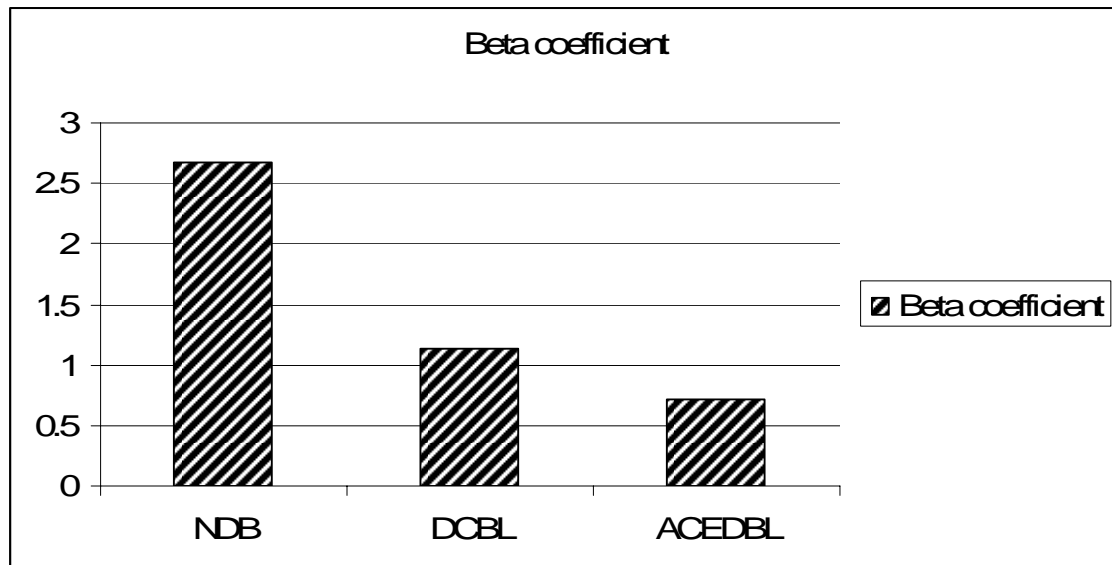
The calculated correlation coefficient, covariance and beta coefficients of the stocks of development banks are presentation in table and figure;

Table 4.1.12 the calculated correlation coefficient, covariance and beta coefficients of the stocks of development banks.

Development banks	correlation coefficient(P_{im})	covariance (covim)	Beta coefficient (β_{im})
NDB	1.193	3371.05	2.673
DCBL	0.647	1424.94	1.1297
ACEDBL	0.591	897.347	0.7115

Results presented in above table are shown in following figure:-

Figure 4.1.12: The calculated correlation coefficient, covariance and Beta coefficient of the stocks of Development Banks.



From the results presented above table, the correlation coefficients of the returns of NDBL, DCBI and ACEDBL with marker returns 1.193, 0.647 and 0.591 respectively. It is observed that all three banks have high degree of positive

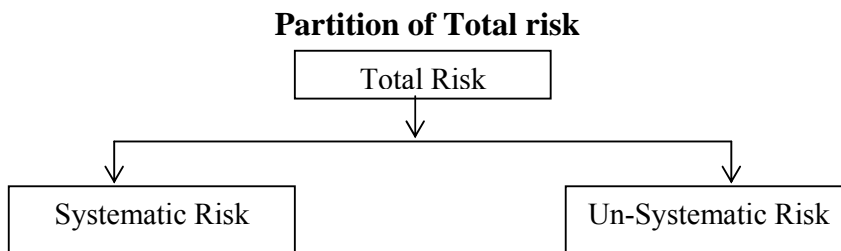
correlation. It means that can't reduce the risk significantly. Among them, the ACEDBL being least correlated can reduce risk to some extent. The NDB being highest correlated can't reduce risk or it is more risky than other.

Covariance of the returns of NDB, DCBL and ACEDBL with market is 3371.05, 1424.94 and 897.347 respectively. As covariance between two variance measures the absolute association, there is the highest absolute association between the returns of NDB and market. Among all the least association is of ACEDBL. On the basis of covariance, NDB is the most risky stock while ACEDBL is least one.

From figure 4.1.12, by observing the individual stock's beta coefficient, of the return of development banks, all the stocks have been seen aggressive. Among them NDB is most aggressive for which have the value of beta coefficient is 2.673 and the ACEDBL is the defensive stock with beta coefficient 0.7115. The beta coefficient of DCBL is 1.1297. On the basis of beta coefficient of the stocks, it can be said that all stocks are risky, among than NDB is the most risky and ACEDBL is least risky.

4.1.13 Systematic and Unsystematic Risk

Total risk is measured by the variance of returns and can be portioned in to systematic and unsystematic risk. Systematic risk is also called unavoidable or UN diversifiable risk it is called by market factors. Changes in economic Political technological and sociological environment that affect securities markets are sources of systematic risk.



The systematic risk is computed as

$$\text{Systematic Variance} = \beta^2 \times \text{Var}(R_m)$$

The percentage of systematic risk is measured by the coefficient of determination.

It is also called proportion of systematic risk.

Proportion of systematic risk is calculated by:

$$\text{Proportion of systematic risk} : \frac{\text{Systematic Risk}}{\text{Total Risk}}$$

$$= \frac{\beta^2 \text{Var}(R_m)}{\text{Var}(R_i)} = P_{im}^2$$

UN -systematic risk is called avoidable or diversifiable risk or non market risk or company specific risk. It is ascertained as:

$$\text{Un-systematic risk} = \text{Total Risk} - \text{Systematic Risk: } \text{Var}(R_1) - \beta^2 \text{Var}(R_m)$$

The total risk systematic risk and un-systematic risk of commercial and development banks are presented below:-

Commercial Bank

Table: 4.1.14. The Total Risk, Systematic and Un-systematic Risk of commercial banks.

Table No.

commercial Banks	Total risk	systematic Risk	Proportion of systematic	Unsystematic Risk	proportion of Unsystematic Risk
NABIL	3877.72	438.014	0.113	3439.706	0.887
NIBL	1917.405	685.280	0.357	1232.125	0.643
HBL	651.96	53.368	0.082	598.592	0.918

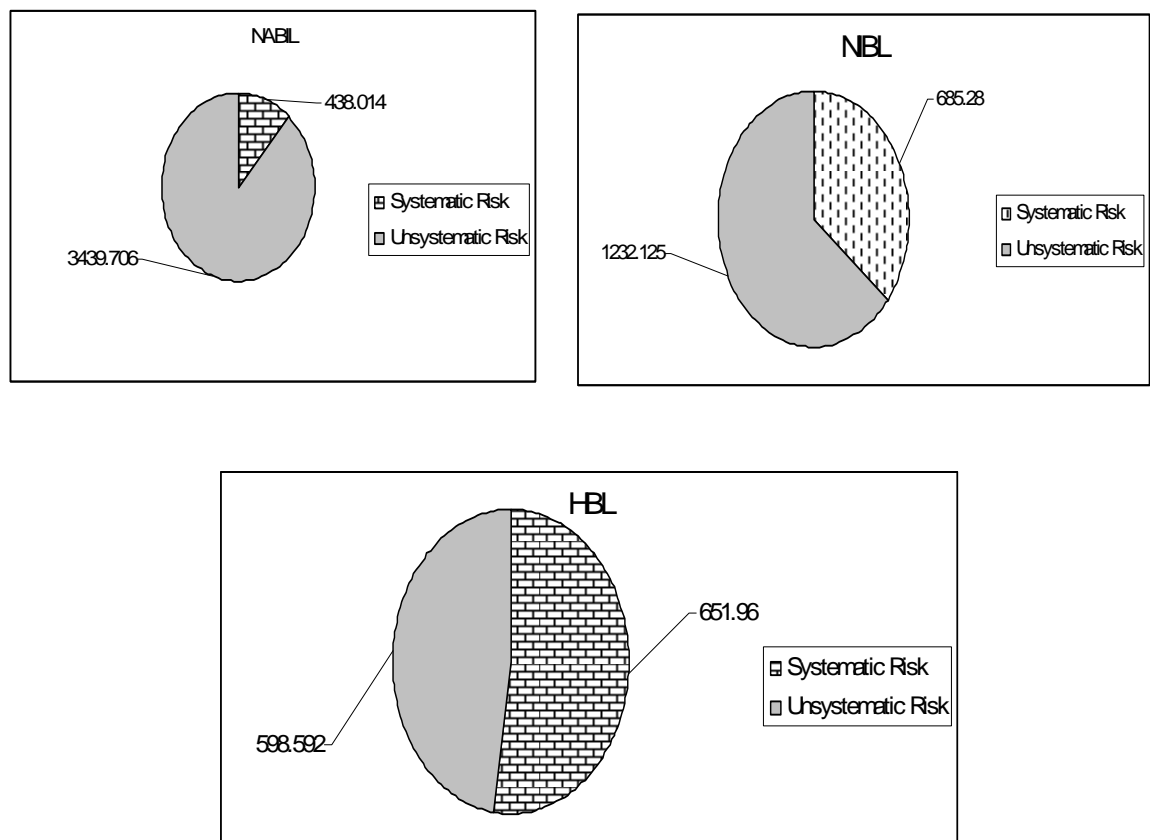
The statically results shown in above table, depicts that total risks, systematic risk and un-systematic risk of commercial banks. The total risk i.e. variance of NABIL, NIBL and HBL are 3877.72, 1917.405 and 651.96 respectively. On the basis of variance, the NABIL is seen most risky among them and HBL is seems least risky and the NIBL is medium.

While portioning the total risk into systematic and un-systematic, the systematic risk represents the uncertainty due to the market factor that the organization can't avoid. The systematic risk of NABIL, NIBL and HBL are 438.014, 685.280 and 53.368 respectively. The results show that NIBL has the largest one and the HBL has the least of systematic risk the NABIL has medium, when this systematic risk is expressed in terms of proportion. The proportion of systematic risk of NABIL, NIBL and HBL are 0.113, 0.357 and 0.082. The portion of total risk of NABIL, NIBL and HBL are small value than unsystematic proportion. The market is seemed in favor of HBL as its proportion of systematic risk is 0.082, which is very small value.

The unsystematic risk of NABIL, NIBL and HBL are 3439.706, 1232.125 and 598.592 respectively. With the comparison of total risk, the unsystematic risk of NABIL, NIBL and HBL are large and the proportion of unsystematic risk of

NABIL, NIBL and HBL are 0.887, 0.643 and 0.918 respectively. From the result it is clear that they are unsuccessful to avoid the avoidable risk and the organization are seem not to well manage. HBL has the highest unsystematic risk. It is seen unsuccessful to avoid the avoidable risk ever through market is in its favor. Because of the management error of company Specific weakness of HBL it has been increase to 598.592 for which the corresponding proportion of unsystematic risk is 0.918.

Figure: 4.1.13. Systematic and unsystematic Risk of commercial Banks



Development Banks

Table: 4.1.14. The total Risk, Systematic Risk and Unsystematic Risk of Development Banks

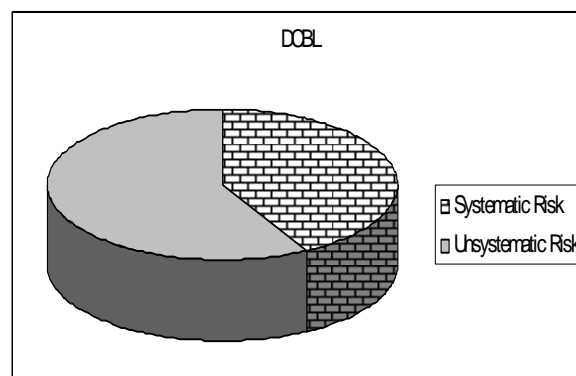
Table 4.1.15

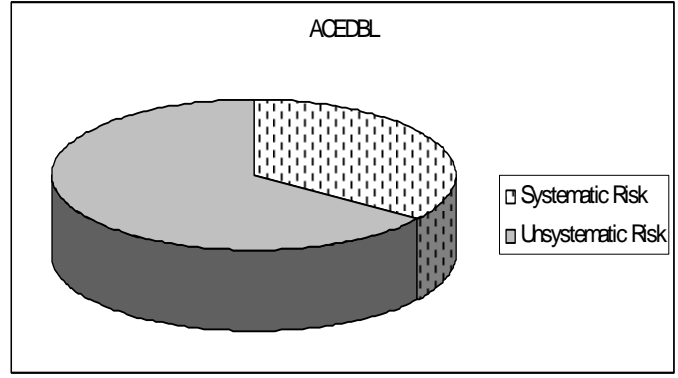
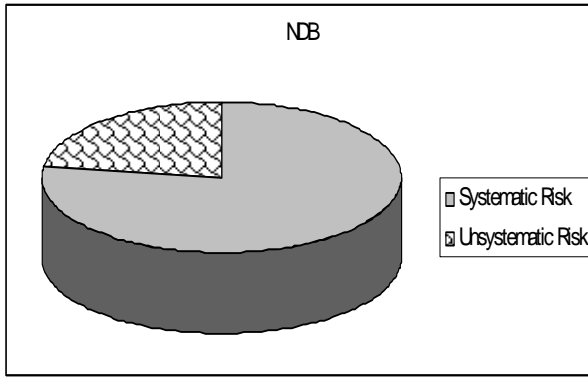
Development Banks	Total risk	systematic Risk	proportion of systematic	Unsystematic Risk	Portion of unsystematic Risk
NDB	6335.28	9011.827	0.5775	2676.547	0.4225
DCBL	3849.63	1609.686	0.4181	2239.944	0.5819
ACEDBL	1827.053	638.506	0.3495	1188.547	0.6505

The statically result shown in above table depicts that Total Risk, Systematic Risk and unsystematic risk of development banks. The total risk i.e. variance of NDB, DCBL and ACEDBL are 6335.28, 3849.63 and 1827.05 respectively. On the basis of variance the NDB is the most risky stock as its total risk is maximum and the ACEDBL is least risky because its variance is minimum among all three stocks. The DCBL has the medium risk among them.

When systematic risk is portioned from total risk, it separates the due to market factors. The systematic risk of NDB, DCBL and ACEDBL are 9011.827, 1609.686 and 638.506 respectively. Like in total risk, the NDB is seen most risky being highest value of systematic risk. The ACEDBL is least risky due to the minimum value of systematic risk. The DCBL is medium one when this systematic risk expressed in terms of proportion. The portion of systematic risk of NDB, DCBL and ACEDBL are 0.5775, 0.4181 and 0.3495 respectively. NDB has large proportion of systematic risk with the comparison of unsystematic risk. The NDB, DCBL and ACEDBL have significantly difference between systematic and unsystematic risk.

Figure: 4.1.15: Systematic and Unsystematic Risk of Development Banks





4.1.6 Price situation of the stock of Listed Companies

The required rate of return is the minimum rate of return that an investor expects from his/her investment in risky assets. It is the function of real rate of return and systematic risk. The required rate of return is the return on risk free assets i.e. government securities plus risk premium. It is determined by CAPM/SML. The greater the beta of a security, the greater will be the risk and greater the expected return required. Likewise, the lower the beta, lower will be the risk, the more valuable it become and the lower the expected returned.

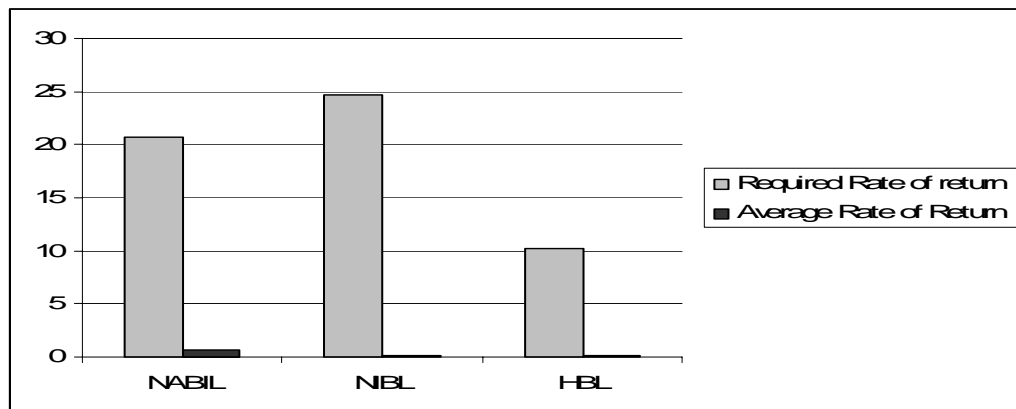
The beta coefficients, risk premium and required rate of return on the stock of commercial banks and development banks are summarized as follows:-

Commercial Banks

Table: 4.1.15: Price situation of common stock of commercial Banks:-

Commercial Banks	Beta (β)	Rm	Rf	Risk Premium ($\bar{R}_m - \bar{R}_f$)	Required Rate of return	Average Rate of Return	Price Situation
NABIL	0.5893	31.89%	4.66	27.23	20.71	61.728%	Under Price
NIBL	0.7371				24.73	15.97%	Over price
HBL	0.2057				10.26	19.6%	Under Price

Figure: 4.1. 15: Price situation of common stock of commercial Banks:-



From the result presented above, it has been observed that the overall average market return is 31.89%. The average treasury bills rate is 4.66%. The risk premium for all stocks of commercial banks in the market is the difference between the market rate of return and risk free rate of return which is 27.23% based on the risky-ness of the stocks, the required rate of return of the banks NABIL, NIBL and HBL are 20.71%, 24.73% and 10.26% respectively. Higher the beta coefficient, higher will be the required rate of return of NIBL is maximum among all the stocks i.e. 0.7371. Its required rate of return is also higher among all. Higher systematic risk requires higher risk premium. Likewise, the beta coefficient of the stocks of HBL is the lowest among all i.e. 0.2057 and the required rate of return is 10.26% which is the smallest required rate of return. The beta coefficient of NABIL is 0.5893 and the required rate of return is 20.71. The required rate of return of HBL is seen significantly small. This is because that the calculation of required rate of return considers only systematic risk but not the systematic risk.

Comparing the required rate of return and average rate of return/expected rate of return of the stocks of individual commercial banks; the required rate of return for all the NABIL and HBL banks are less than average rate of returns. It is observed that, NIBL has greater required rate of return. This is the case of overpricing. The investor should not buy such stock. It is better to sell the short for investors. In the case of overlapping investor should go through short position. In the case of NABIL and HBL, the required rates of returns are greater than that of expected/average rate of return. So these two shares are appeared attractive to the investors. In case of these two commercial banks, invertors are required to take long position to gain from the stocks. The investors are suggested to purchase (not to sell) the common stocks of these two commercial banks in the market.

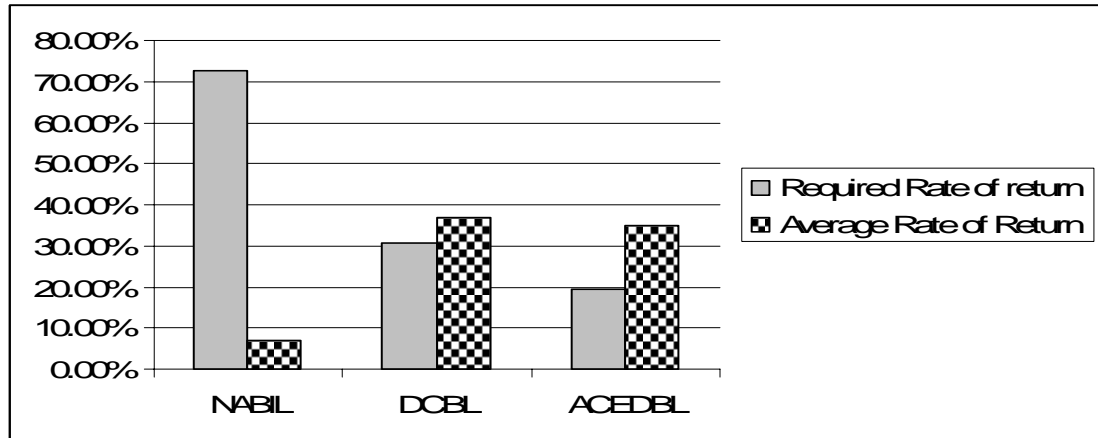
Development Banks

Table 4.1.16 price situation of common stocks of development Banks

Table

Development Banks	Beta(B)	Rm	Rf	Risk premium ($\bar{R}_m - \bar{R}_f$)	required Rate of return	Average rate of Return	Price Situation
NABIL	2.673	31.89%	4.66%	27.23%	72.79%	6.91%	Over Price
DCBL	1.130				30.77%	36.86%	Under Price
ACEDBL	0.712				19.39%	34.76%	Under Price

Figure 4.1.16 price situation of common stocks of Development Banks.



From the result of presented in the table 4.1.16, it has been observed that the overall average market return is 31.89% the average rate of Treasury bill is 4.66%.

The risk premium for all stocks of development banks in the market is the different between risk free rate and market rate of return which is 27.23% Based on the riskiness of stocks in terms of systematic risk only, the required rate of return for NDBL, DCBL and ACEDBL are 72.79%, 30.77%, and 19.39% respectively. Higher the systematic risk, higher the required rate of return. Because the beta coefficient is directly proportional to the required rate of return .Since, beta coefficient of NDB is the highest among all this is the reason for being maximum required rate of return of the stocks of NDBL the beta coefficient of DCBL is greater than that of ACEDBL and smaller than that of NDBL which is 30.77%. The beta coefficient of ACEDBL is the smallest among all which is bearing the minimum required rate of return i.e.19.39%. Comparing the required rate of return with the average/expected rate of return of the stocks, it is observed that NDB has highly greatest required rate of return. This is the case of over pricing. The investor should not buy such stock. It is better to sell the short for investors. In the case of overpricing, investor should go through short position. In the case of DCBL and ACEDBL the required rate not returns are greater than that of expected/average rate of return so these two shares are appeared attractive to the investors. Hence investors are advised to purchase not to sell these shares in the market. In case of these two companies, investors are required to take long position to gain from the stocks.

4.1.7 Portfolio Analysis

To analyze the portfolio risk and return, the commercial banks and development banks are categorized into two groups. Firstly, the portfolio of commercial banks is formed between the different sample commercial banks, and portfolio risk and returns are calculated to reach in a decision of best commercial banks portfolio. Secondly, stocks of different development banks are combined different proportion to from the best portfolio of development banks. After findings the best portfolios of two different sectors, than it is find the portfolio between

commercial banks and development banks on the basis of commercial banking index and development banking index.

For finding two assets portfolio risk and return, it is calculated the optimal weight for minimum risk. For finding three assets portfolio weight of the stock are taken randomly.

The portfolio returns of the companies is the weighted average returns of the investment in different stock. Mathematically it is expressed as:-

Portfolio returns $(\bar{R}_p) = W_1 \times \bar{R}_1 + W_2 \times \bar{R}_2 + \dots + W_n \times \bar{R}_n$ Here \bar{R}_p represents expected return on individual assets or stocks and W represents the weight of the investment in individual stocks/assets. Similarly the risk is calculated using the following mathematical relationship;

$$\sigma_p = \sqrt{W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1 W_2 \text{Cov}_{1,2} + 2W_2 W_3 \text{Cov}_{2,3} + 2W_1 W_3 \text{Cov}_{3,4}}$$

Here, σ_p is portfolio risk, W is investment in individual stocks, σ is risk on individual stocks covariance is variance of individual stocks with market.

The calculated portfolio risk and returns of commercial banks and development banks are presented in table and graph;

Commercial banks

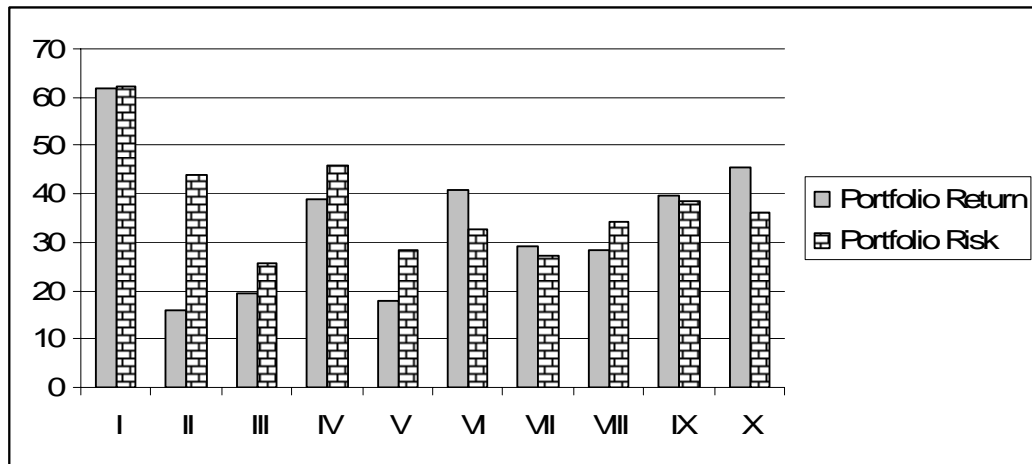
Table: 4.1.17. Portfolio Risk and Returns between commercial Banks.

Portfolio	Weighted of NABIL	of NIBL	stock HBL	Portfolio (Rp)	Portfolio (σ_p)	C. V.	Ranking
I	1	0	0	61.788	62.27	1.008	5 th
II	0	1	0	15.97	43.79	2.74	10 th
III	0	0	1	19.6	25.53	1.303	8 th
IV	0.5	0.5	0	38.89	45.81	1.178	6 th
V	0	0.5	0.5	17.79	28.51	1.60	9 th
VI	0.5	0	0.5	40.64	32.83	0.808	2 nd
VII	0.25	0.25	0.5	29.24	27.312	0.934	3 rd
VIII	0.25	0.5	0.25	28.33	34.056	1.202	7 th
IX	0.50	0.25	0.25	39.79	38.35	0.964	4 th
X	0.60	-0.20	0.60	45.64	36.16	0.79	1 st

Above the table shows the different portfolios formed by combining different commercial banks including single stock investment also. There are 10 portfolios shows in above table. These are single assets investment and next three are two assets portfolio. Remaining four are three assets portfolio in different portfolios are different and can't be select on best portfolio on these banks, so coefficient variance are calculated which measures the risk per unit

return. Thus a best portfolio can be selected. This table is presented in the following graph.

Graph: 4.1.17. Portfolio Risk and Return between commercial Banks.



On analyzing the single assets portfolio that is investing in single stocks, the portfolio I is seen best with the comparison of portfolio I to portfolio II, the return is higher than of II and the higher risk is also higher return. In such situation we can't find that which one is dominant portfolio and need to calculate the coefficient variance for compared portfolio. Between the portfolio I and II the coefficient variance of portfolio I is the best while portfolio II and III are compared the return on II is 15.97% and on III is 19.6%. Similarly the risk on II is 43.79% and on III is 25.53%. The portfolio III is best with the comparison of portfolio III to portfolio II, the return is higher than that of II and the risk is lower than that II. So, the portfolio III dominates portfolio II. Among three single assets investment, the portfolio I is seen best. For two assets portfolios, portfolio IV, V and VI are compared the return on IV is 38.089% on V is 17.79% and on VI is 40.64%. Similarly the risk on IV 45.81%, on V is 28.51% and on VI is 32.82%. When portfolio IV is compared with p[portfolio V both portfolio return and portfolio risk are seen higher. This means that we need to move through coefficient variance. The C.V. of portfolio IV is lower than portfolio V. That means this portfolio offer seen lower risk for one unit of return. Likewise portfolio V is compared with portfolio VI both portfolio return and portfolio risks are seen higher in portfolio VI than portfolio V. The C.V. of portfolio VI is lower than portfolio V. Among all three portfolios, the C.V. of portfolio VI is lowest, that means this portfolio offer least risk for one unit return.

Comparing the three assets portfolios, portfolio VII, VIII, IX and X are compared the return on VII is 29.24% on VIII is 28.33% on IX is 39.79% and on X is 45.64%. Similarly the risk on VII is 27.312% on VIII is 34.056% on IX is 38.35% and on X is 36.16%. When portfolio VII is compared with portfolio VIII, portfolio VII has higher return lower risk than portfolio VIII. The C.V. of

portfolio VII is also lower than portfolio VIII. So portfolio VII is better than the portfolio VIII. Likewise portfolio VIII is compared with portfolio IX both portfolio return and portfolio risk are seen higher of portfolio IX than portfolio VIII. Analyzing on the Base of C.V. of portfolio IX has lower than VIII. So portfolio IX is better than portfolio VIII. portfolio IX is compared with portfolio X, portfolio IX has lower return higher risk and portfolio X has higher return lower risk. The CV of portfolio X is lower than portfolio IX. so portfolio X is dominating portfolio IX. Among all three assets portfolio X portfolio has highest return and lowest c.v. In this reason portfolio X is best among all four portfolios. Portfolio X is dominating, all other portfolio, portfolio X is selected and other three are rejected.

While we go through over all study of all portfolios the coefficient variation of portfolio X is seen least, so it is the least risky assets. It comes in 1st position in selection. The portfolio VI is second position and portfolio VII is in 3rd position.

Furthermore, while making two or three assets portfolio, it is seen that the large proportion investing in NABIL stock. Significantly reduce the risk without significant reduction in return.

Development Banks

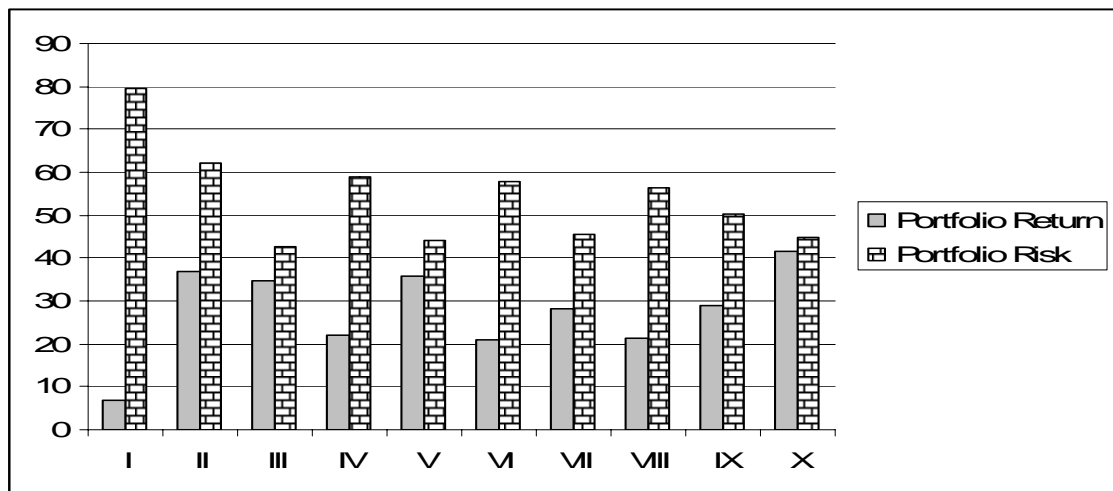
Table 4.1.18 shows the different portfolios formed by combining different development banks in different proportion. The single asset investment has also shown in the table to find out that whether it is better to invest in portfolio or in single assets. There are ten portfolios shown in the table. The first three are single assets investment. Next three are two assets portfolios and the remaining four are three assets portfolios. The risk and return of different portfolios are different on

The basic of risk and return, we find out the dominant stock one and select. but if it is not possible for finding the dominant stock; than we calculate the coefficient of variation. The stock having least C.V. we choose the best portfolio

Table 4.1.18: Portfolio Risks and Returns between Development Banks

Portfolios	Weighted of Stock			Portfolio Return (Rp)	Portfolio Risk (σ_p)	C.V.	Ranking
	NDB	DCBL	ACEDBL				
I	1	0	0	6.91	79.59	11.52	10 th
II	0	1	0	36.86	62.045	1.68	4 th
III	0	0	1	34.76	42.744	1.230	2 nd
IV	0.5	0.5	0	21.885	58.89	2.69	8 th
V	0	0.5	0.5	35.81	44.14	2.01	6 th
VI	0.5	0	0.5	20.835	57.76	2.77	9 th
VII	0.25	0.25	0.5	28.32	45.62	1.611	3 rd
VIII	0.5	0.25	0.25	21.36	56.39	2.64	7 th
IX	0.25	0.5	0.25	28.85	50.22	1.74	5 th
X	-0.2	0.6	0.6	41.59	44.66	1.074	1 st

Figure 4.1.18: Portfolio Risks and Returns between Development Banks



On analyzing the single assets portfolio, that is investing in single stocks, the portfolio II is seen, best with the comparison of portfolio II to portfolio I, the return is higher than that of I and the risk also lower than that I. So, the portfolio II dominates portfolio I. While portfolio II and III are compared the return on second is 36.86% and on III is 34.76% similarly the risk on II is 62.045% and on III is 42.744%. In such situation we can't find that which one is dominant portfolio and need to calculate the coefficient variation for compared portfolios. Between the portfolio II and III, the coefficient variance of portfolio III is the best. Among three single assets investment the portfolio III is seen best and portfolio I is worst so the investor suggest that not to select portfolio I. portfolio III is selected.

For two assets portfolio, the return on V is higher among all three i.e. 35.81% where the returns on IV and VI are 21.885% and 20.835% respectively. The risk

on the portfolios IV, V and V are 58.89% 44.14% and 57.76% respectively. Here the risk of portfolio V is seen lowest. It is seen that the return is highest and the risk is lowest on portfolio V among all three portfolio. The C.V. of portfolio is also least. Hence, it is selected among all three stocks.

Comparing the three assets portfolio, portfolio VII, VIII, IX and X are compared the return on VII is 28.32% on VIII is 21.36% on IX is 28.85% and on X is 41.59%. Similarly the risk on VII is 45.62% on VIII is 56.39%, on IX is 50.22% and X is 44.66%. When portfolio VII is compared with portfolio VIII portfolio VII has higher return and lower risk than portfolio VIII. The C.V. of portfolio VII is better than portfolio VIII. Likewise portfolio VIII compared with portfolio IX portfolio return is higher and risk is lower on portfolio IX than portfolio VII. The C.V of portfolio IX is also lower so portfolio IX is selected. Portfolio IX is compared with portfolio X. Portfolio IX has lower return higher risk and portfolio X has higher return lower risk. The C.V. of portfolio X is also lower than portfolio IX so portfolio X dominant portfolio IX. Among the three assets portfolios, the portfolio return is higher and portfolio risk is lower than that all other portfolio. So portfolio X is seen best among all three assets portfolio. Thus, it is selected.

For the over study the coefficient of variation in three assets portfolio on portfolio X is least among all ten portfolios. In the case, the investors can invest in three development banks. They are NDBL, DCBL and ACEDBL. The proportion of the investment in NDB, DCBL, and ACEDBL are -0.2, 0.6 and 0.6 respectively. The negative proportion of investment tells us that the stocks equal to 20% in NDB should sell the short and 60%, 60% should investing DCBL and ACEDBL. After selecting this best portfolio investor can earn the return of 60% should investing DCBL and ACEDBL. After selecting this best portfolio investor can earn the return of 41.59% bearing 44.66% risk. It is seen that portfolio X in 1st position in selection. The portfolio III is in second position and portfolio VIII is in 3rd position.

Furthermore, while making two or three assets portfolio, investing large proportion in ACEDBL, small proportion in remaining two significantly reduces the risk without significant reduction in return.

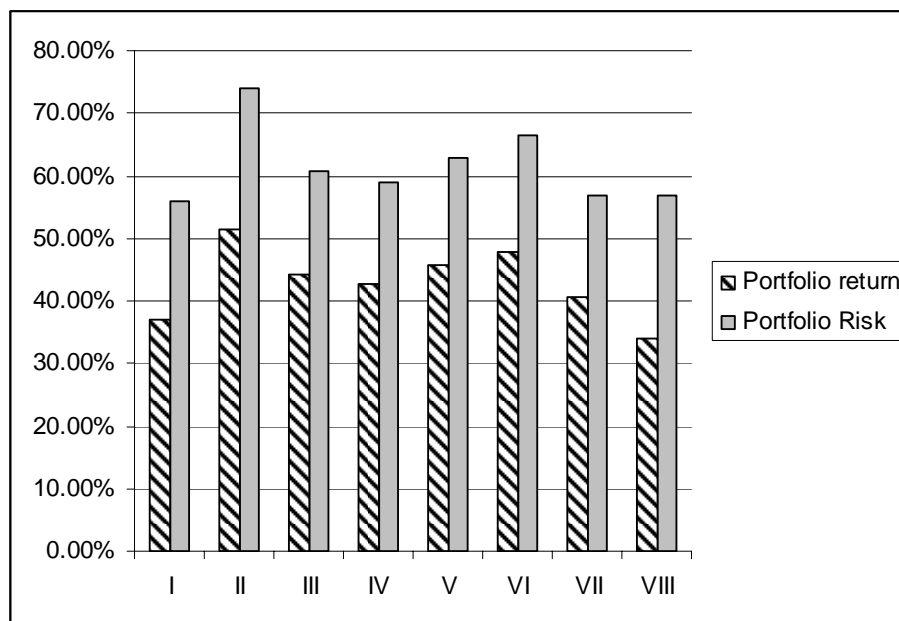
Portfolio between commercial bank and development banks

Portfolio return and risk of commercial and development banks are show below:

Table 4.1.19 Portfolio return and risk of commercial and Development banks

Portfolio	Proportion of investment		Portfolio return(\bar{R}_p)	Portfolio Risk(σ_p)	C.V	Ranking
	Comm. Banks	Dev. Banks				
I	1	0	36.96%	55.81%	1.51	7 th
II	0	1	51.45%	73.98%	1.44	6 th
III	0.5	0.5	44.205%	60.635%	1.372	1 st
IV	0.60	0.40	42.756%	58.86%	1.38	3 rd
V	0.40	0.60	45.65%	62.74%	1.374	2 nd
VI	0.25	0.75	47.835%	66.48%	1.39	4 th
VII	0.75	0.25	40.58%	56.93%	1.40	5 th
VIII	1.20	-0.20	34.06%	56.89%	1.67	8 th

The results presents in above table shows that portfolio risks and returns that is formed by combining banks and development banks in different portfolios. The investment on individual banking sector provides return on commercial banks is 36.96% and on development banks is 51.45% similarly, the risk on commercial banks is 55.81% and on development banks is 73.98% the data shows that the returns on commercial banks and the risk on development bank is higher than risk on commercial bank. In this case we move thorough coefficient of variation, slightly less so the investment on development banks seen before hence commercial banking sector is slightly dominated by development banking sector.



On analyzing two assets portfolio, firstly we have calculated optimal weight for minimum risk Different random weights have been taking for the calculation of portfolio risk and return. It is seen that the return on portfolio VI is higher among all portfolio i.e. 47.83% but risk on the same portfolio is also higher i.e. 66.48% for this case we move through coefficient of variation, We have calculated the coefficient of variation, the C.V of portfolio III, IV, V, VI, VII, and VIII have 1.372, 1.38, 1.374, 1.39, 1.40, and 1.67 respectively. The coefficient of variation of portfolio III is seen least among all six portfolios intense it is selected as best portfolio among assets portfolio.

For the over all study the coefficient of variation in two assets portfolio is least portfolio III has the least values of coefficient of venation among all i.e. 1.372. Hence, it is the best portfolio between the commercial banks and development banks.

Further more, while forming the portfolio between commercial banks and development banks 50% / 50% weight providing in both commercial and development banks equally in commercial banks and development banks.

4.1.8 Portfolio performance Evaluation:-

William F. Sharpe, Jack Treynor and Dr. Michel C. Jensen performance. Sharpe considered total risk and return simultaneously. Here Portfolio performance of listed companies has been evaluated based on Sharpe Index.

Commercial Banks

The portfolio performance indicators using Sharpe index of each portfolio show in the table no 4.1.17 is present in table No. 4.1.20 below

Table: 4.1.20 Sharpe Index of portfolio performance measure for CBs.

Portfolios	$S_p = \frac{R_p - R_f}{\sigma_p}$	Ranks
	0.917	4th
I	0.258	10th
II	0.585	8th
III	0.747	7th
IV	0.461	9th
V	1.096	2nd
VI	0.90	6th
VII	0.989	3rd
VIII	0.916	5th
IX	1.133	1st
X		

Form the table 4.1.20 it has been seen that the Sharpe index of portfolio performance measure of top five portfolios X, VI, VIII, I and II are 1.133, 1.096,

0.989, .0917 and 0.916 respectively. The Sharpe performance index of the portfolio X is seemed highest among all and it is the best portfolio. This portfolio consists of 60% of investment in NABIL 60% investment in HBL and 20% stock of NIBL should be sold short, the worst 0.258, which consists of 100% investment in NIBL.

Development Banks:-

The portfolio performance indicators using Sharpe Index of each portfolio Show in table 4.1.18 is present in the table 4.1.21 below:-

Table 4.1.21 Sharpe index of portfolio performance measure for Development Banks

Portfolios	S_p	Ranks
I	0.0283	10 th
II	0.5189	4 th
III	0.704	3 rd
IV	0.292	8 th
V	0.706	2 nd
VI	0.28	9 th
VII	0.5186	5 th
VIII	0.296	7 th
IX	0.482	6 th
X	0.827	1 st s

Form the table 4.1.21, it has been seen that the portfolio measure of Sharpe index of top five portfolio are X, V, III, II, and VII respectively, for which there corresponding value of Sharps performance Index are 0.827, 0.706, 0.704, 0.5189 and 0.5186 respectively. The Sharpe performance index of portfolio X is seen highest among all. This portfolio involves the investment on DCBL and ACEDBL. This portfolio further says that 20% stocks of NDBL should be sold short and 60% fund should be invested on ACEDBL for getting maximum returns minimizing the risk at optimal level. Hence, portfolio X is the best portfolio among all on the basis of Sharpe performance measure. The least value of Sharpe performance index is 0.0283 of portfolio I among all.

Commercial and Development Banks

The portfolio performance indicators using Sharpe index of each portfolio show in table 4.1.19 is present on table below:-

Table 4.1.22 Sharpe index of portfolio measure for commercial Banks and Development Banks

Portfolios	$S_p = \frac{\overline{R_p} - \overline{R_f}}{\sigma_p}$	Ranks
I	0.579	7 th
II	0.632	5 th
III	0.6522	2 nd
IV	0.647	4 th
V	0.6533	1 st
VI	0.649	3 rd
VII	0.631	6 th
VIII	0.517	8 th

The results presented in below table shows the Sharpe performance index of eight portfolios among them the maximum index is of portfolios V for which the corresponding value is 0.653. the portfolio III, VI, IV and II are in 2nd, 3rd, 4th and 5th position respectively for which their corresponding values are 0.652, 0.649, 0.647 and 0.632 respectively the portfolio VIII has the least value of Sharpe performance index among all.

4.1.9 Hypothesis testing

Regarding the return characteristics

Commercial Banks

Null Hypothesis (H_o): $\overline{R}_i = \mu$ i.e. is no significant difference between the mean return of population and sample.

Alternative Hypotheses (H_i): $\overline{R}_i \neq \mu$ i.e. there is significant difference between the mean return of population and sample.

Decision:- The calculated value of t is 0.0273 the critical value of t at 5% level of significance for two tailed test at degree of freedom (3-1)=2 is 4.303 since the calculated value at t is smaller than the critical value of t at 5% level of significance for two tailed and test (3-2)=2 d.f the Null Hypotheses is accepted and alternative Hypothesis is rejected which mean that the average return of selected commercial banks is not significantly different from the market return. Hence, it can be concluded that average rate of return of the selected commercial bank is equally volatile to return of market.

Development Banks

Null Hypothesis (H_o): $\overline{R}_i = \mu$ i.e. there is no significant difference between the return of population and sample.

Alternative Hypotheses (H_1): $\bar{R}_i \neq \mu$ i.e. there is significant difference between the return of population and sample.

Decision: The calculated value of t is 0.279. The critical value of t at 5% level of significance for two tailed test a degree of freedom 2[3-1] is 4.303. Since, the calculated value of t is smaller than that of tabulated value of t. Thus the Null Hypothesis is accepted and alternative Hypothesis is rejected which means that the average return of selected different form the market returns. Hence, it can be concluded that average rate of return of the selected development bank is equally volatile to return of market.

4.3 Major finding of the study

MBS and DPS trend of common stock

Generally, commercial banks are providing regular dividend and development banks are not so regular. MPS moment is based on DPS of commercial and development banks, sometimes not correctly MPS of regular dividend providing company at MPS of regularly dividend providing company is increasing regularly and other are not so invest are suggested to choose regular dividend providing company's stock.

Risk and Return Characteristics

Commercial Banks

The share of NABIL offered the highest average rate of return i.e. 61.788% with highest risk i.e. 62.27% and its C.V (risk per unit) is minimum i.e. 1.008 when as NIBL and HBL has 2.74 and 1.303 respectively. The different rate of return and risk investment. NIBL and HBL seem to be lower risky and low return than NABIL. But both banks C.V is higher than NABIL. Considering the overall market however, the shares of all commercial banks are attractive for investment.

Development Banks

Comparing development banks, the share of DCBL offered highest average rate of return, i.e. 36.86% with medium risk i.e. 62.045% and its C.V (per unit risk) is medium 1.68 where as NDB and ACEDBL have 6.91% , 34.76% average rate of return 79.59%, 42.744% risk and their C.V. 11.52, and 1.23 respectively. The shares have different rate of return and risk. It is seem that the ACEDB has lowest C.V. So the ACEDBL seems to be the best for investment. NDB has lowest return and highest risk and C.V. is also very high. So NDB seems to be high risky for investment on ACEDBL seems to be the best and not to invest on NDB.

Market Risk and Return

The average rate of return on overall market NEPSE, commercial banking index and development banking index are 31.89%, 36.096% and 51.45% respectively. Likewise, the risks on corresponding markets are 35.51% 55.81% and 73.98% respectively. Development banking index have highest return with highest risk than NEPSE index. Comparing C.V. development bank's C.V. i.e. 1.44 is higher than NEPSE C.V. i.e. 1.113. So NEPSE per unit risk is low. Commercial banks have higher return higher risk. Comparing C.V. NEPSE index C.V. is less than commercial Banks [i.e.1.113<1.51]. NEPSE index per unit lowest than commercial banks index and development banks index over all market NEPSE is more attractive than commercial banks and Development banks. Commercial banks and development banks are risky. Commercial banks have higher risky than development banks.

Market Sensitivity

Commercial Banks

- From the result, covariance between the returns of NABIL, NIBL and HBL with overall market returns are 743.87, 929.658 and 259.479 respectively. As covariance between two variables measures the absolute association between them there is higher absolute association between the return of NIBL and the market. Among all NABIL has the second largest association and HBL has the least with market.
- The correlation coefficient of NABIL, NIBL and HBL are positive and less than one which indicated that returns on individual stocks move together with the proportionate movement of the returns on overall market. HBL has the lowest Value of correlation so portfolio on such stock with market can reduces the risk.
- The beta coefficient of NABIL, NIBL and HBL are less than 1. On the basic of beta coefficient, it can be concluded that all stock of commercial bank are defensive since there is less than 1. The stock of NABIL, NIBL and HBL are less risky than the market

Development Banks

- From the returns, the covariance between the returns of NDB, DCBL, and ACEDBL are 3371.05, 1424.94 and 897.347 respectively. Among them the NDB has highest and ACEDBL has lowest one. The positive value of covariance shows that the returns of all selected development banks move in the direction of returns of market. Being highest covariance of NDB, it has the highest absolute association with market and ACEDBL has least association.
- The correlation coefficient of NDB, DCBL and ACEDBL with market returns are 1.193, 0.647 and 0.591 respectively. All the selected development banks have high degree of positive correlation coefficients. It means that can't reduce the risk significantly. Among them, the ACEDBL being least correlated can reduce risk to some extent. The NDB being highest correlated can't reduce risk or it is more risky then other
- On the basis of beta coefficient, it can be concluded that all stocks of sample development bank are aggressive. Among them NDB is highly aggressive as it has beta coefficient 2.673. On the basis of beta coefficient, it can be said that all stocks are risky. Among them NDB is the most risky and ACEDBL is less risky than the market

Systematic and Unsystematic risk

Commercial Banks

Comparing each other, the stocks of NIBL has the largest and HBL has the least systematic risk. The NABIL has medium systematic risk. But the proportion of systematic risk of NABIL, NIBL and HBL are 0.113, 0.357 and 0.082. The market is seen in favor of HBL as its proportion of systematic risk is 0.082 which is very small value. On the basis of systematic risk the HBL is seemed most attractive among all selected commercial banks. However, from the unsystematic risk perspective, the management error company's specific weakness of this bank is highest HBL has the highest unsystematic risk. It is seen unsuccessful to avoid the avoidable risk ever through market is in its favor Because of the management error of company. The systematic risk of NIBL is highest i.e.0.357 which means that 0.357% of volatility in the return of NIBL is due to the market factor However, the unsystematic risk of NIBL is 0.643 which is least among all selected commercial banks. NIBL is able to avoid unsystematic risk with efficient management. NABIL bears the 11.3% systematic risk due to market factors and 88.7% unsystematic risks. On the basis of proportion of systematic and unsystematic risk NABIL possesses the middle portion. However, it has highest total risk i.e. 3877.72.

Development Banks:

The systematic risk of NDBL, DCBL and ACEDBL are 57.75%, 41.81% and 34.95% which shows that the volatility of return due to factors of NDB is highest i.e.57.75% and the least is of ACEDBL i.e. 34.95%.The unsystematic risk of NDBL, DCBL and ACEDBL are 42.25%, 58.19% and 65.05%. The highest unsystematic risk is of ACEDBL i.e. 65.05% which means that 65.05% of variability in return is due to internal factors of organization like management errors, company's specific weaknesses. The least unsystematic risk is of NDBL. It is seem as able to manage internal factors. However it has the highest total risk i.e. 6335.28. The DCBL has medium systematic and unsystematic risk among them.

Price Situation

Commercial Banks:

The required rates of return of NABIL, NIBL and HBL are 20.71%, 24.73% and 10.26% respectively where as the average rate of return/expected rate of returns of NABIL, NIBL and HBL are 61.78%, 15.97% and 19.6% respectively. It is seen in the result average rate of return/expected rate of return of NABIL and HBL are higher than required rate of returns. Hence these two banks stocks are in under-priced situation. Hence investors are suggested to buy the securities and hold the long position to market profit from commercial banks. The expected rate of return is less than required rate of return in the case of NIBL Hence, this stock is overpriced. In such situation investors are suggested to sell the stocks of NIBL. Those investor who maintain short position, can earn more profit in overpriced situation.

Development Banks

The required rate of returns of NDBL, DCBL and ACEDBL are 72.79%, 30.77% and 19.39% respectively. Similarly average rate of return/expected rate of return of NDBI, DCBI and ACEDBL are 6.91%, 36.86% and 34.76% respectively. The expected return is less than required rate of return in case of NDBL. Hence, this stock is overpriced. In such situation investors are suggested to sell the stock of NDB. Those investor who maintain short position, can earn more profit in overpriced situation, however, next two stocks of DCBL and ACEDBL the average return/expected rate of return is higher than that of required rate of return. Hence, these stocks are under-priced. Investors are suggested to buy the stocks and hold the long position to make the profits.

Portfolio Analysis

Commercial Banks

Limiting within the investors wealth, ten different portfolios are constructed numbering from I to X. Among them portfolio consists of 60% of investment in NABIL and next 60% investment in HBL and 20% short sell of stock NIBL. It provides 45.64% return with 36.16% risk. It has the least C.V. among all portfolios i.e. 0.79. Another next better portfolio is VI. It consists of 50% investment in NABIL, and 50% investment in HBL. It provides the 40.64% return with 32.83% risk. The C.V. of this portfolio is 0.808. The third better portfolio VII has 29.24% returns at 27.312% risk with C.V. 0.934. The least attractive portfolio is II, which provides 15.97% return at 43.79% risk with C.V. 2.74. The C.V. of this portfolio is highest among all hence rejected second. Hence the portfolio X is best and investors are suggested to construct this portfolio.

Development Banks:-

Limiting within the investors wealth, ten different portfolios are constructed numbering from I to X. Among them the portfolio X is seen best which provides 41.59% return at 44.66% risk. It is the maximum returns among all. The portfolio X consists at 60% investment in DCBL, 60% investment in ACEDBL and 20% short sell of stock NDBL. It has the lowest C.V. i.e. 1.074. Next better portfolio is III which consist of 100% investment in ACEDBL. This dingle assets portfolio provides 34.76% return at 42.744% risk with C.V. 1.230. The third better portfolio i.e. VII has 28.32% return at 45.62% risk with C.V. 1.611. The least attractive portfolio is I which provides only 6.91% return at 79.59% risk with C.V. 11.52. The C.V. of this portfolio is highest among all. The investors are suggested that not to invest in portfolio I or in NDBL bank and portfolio X is the best so invest in this portfolio.

Portfolio of commercial Banks and Development Banks

To study the portfolio risk and return between commercial and development banks, we have chosen commercial banking sector and Development banking sector. Eight different portfolios numbering I to VIII are constructed. From the result, III portfolio is seemed as best which consists of 50% investment in development bank. This portfolio provides 44.205% return at 60.63% risk with C.V. of 1.372. The C.V. of this portfolio is least among all. The second better portfolio is V which provides 45.65% return at 62.72% risk with the C.V. of 1.374. The third better portfolio is IV with return 42.756% at 58.86% risk with the C.V. of 1.38. Hence, III portfolio is most attractive portfolio and portfolio VIII is least attractive with 34.06% return at 56.89% risk with the C.V. of 1.67.

Portfolio Performance Evaluation

Commercial Banks

On the basis of Sharpe index of portfolio performance measure, the portfolio X has the highest value i.e. 1.133. Hence, it is seen best portfolio among different portfolio constructed between commercial banks. This portfolio consists of 60% of investment in NASBIL, 60% investment in HBL and 20% of stocks of NIBL should be sold short. Another portfolio that come in second and third position VI and VIII with Sharpe performance index 1.096 and 0.989 respectively. The least attractive portfolio is II with Sharpe performance index 0.258.

Development Banks

The portfolio X provides the maximum risk premium for one unit risk i.e. Sharpe performance index which is 0.827. Hence it is the best portfolio among all portfolios constructed with different selected development banks. This portfolio consists of investment in NDBL DCBL and ACEDBL. This portfolio further says that 20% of stock of NDBL should be sold short and 60% fund should be invested in DCBL and 60% invested in ACEDBL for getting maximum return. Another two better portfolios with higher performance index are V and III respectively and their corresponding values are 0.706 and 0.704 respectively. The least attractive portfolio is I and its Sharpe performance index is 0.0283.

Commercial Banks and Development Banks

The portfolio constructed between the commercial banks and development banks gives different measure of performance evaluation. Among eight portfolios construction, the portfolio V has the maximum Sharpe performance index i.e. 0.6553. It gives maximum risk premium for one unit of risk among all portfolio. Hence, it is selected as the best portfolio. It consists of 50% investment in commercial banking sector and 50% investment in development banking sector. Another two better portfolios are III and VI with their corresponding Sharpe performance index 0.6522 and 0.649 respectively. The least attractive portfolio is VIII with the index 0.517.

Hypothesis Testing

Commercial Banking:-

Regarding the return characteristic, null hypothesis is accepted and alternative hypothesis is rejected which means that average return of selected commercial banks is not significantly different from the market return. A conclusion is drawn from the findings that average rate of return of the selected commercial banks equally volatile to return of market.

Development Banks

Regarding return characteristics, null hypothesis is accepted and alternative hypothesis is rejected, which means that there is no significant different between average returns of selected development banks and market return of development banks are equally volatile to market returns.

CHAPTER V

5. Summary, Conclusion and Recommendation

This chapter is a complete conclusive and suggestive package based on the study; this chapter is divided into three sections which contains: Summary, Conclusion and Recommendations. The summary part of the chapter of the study gives the brief introduction of above four chapters. Conclusion are made on the basis of the analysis of relevant data by using various statistical tools which presents strengths, weaknesses, opportunities and threats of commercial Banks and Developments Banks. The recommendations are presented in terms of suggestions, which are prepared on the basis of finding and conclusions.

5.1 Summary

The overall development of the country largely depends upon the level of economic development. The economic of a nation depends on the effective utilization off available resources. Capital market is a significant mechanism for the economic development of national economy. Capital Market provides best investment opportunities by transforming the funds surplus to need based sectors through the transaction of financial instruments. Banks and other financial institutions play important role in successful formulation and effective utilization of capital. Hence, the proper mobilizations of available resources are important factors for development.

Commercials Banks, Development Banks, and Financial instruments are considered to be the back bone of the Nepalese economic at present context. They are traded in securities market. Stock market is the largest financial market all over the world where stocks of various business organizations are traded. It has grates role in the development of financial system. Capital markets collect necessary funds and divert the collected funds towards the productive sectors. Due this industrialization is possible it provides beat investment opportunities by transferring the funds from surplus saving to need based sectors through the transaction of financial instrument. Capital market consists of (i) Primary market and (ii) Secondary market. Additionally over the counter is also help to the capital market.

Investment is made with the goal of earning some expected rate of return Inventory seek to minimize inefficient deviations, from this expected rate of return. To minimize inefficient deviations, diversification is essential to the certain of an efficient investment as it can reduce the variability of returns around the expected return.

The expected portfolio return is the simple weighted average of the expected return from the investment represented by a portfolio.

The portfolio risk is measured by the variance of the portfolio's rate of return distribution. The portfolio risk depends on the risk of the individual securities and the covariance between the return of the individual securities.

This study is mainly focused on the portfolio risk and return of the commercial and development banks. The study also focuses on the market volatility of those stocks. It is also focus on how an investor manages his/her inevitable fund in order to maximize their return and reduced risk. Whether he/she has adopted appropriate diversification into practice or not is another aspect of the study.

This study is based on the fundamental analysis of recent five years historical data from F/Y 2005 to 2009 of the common stock of the selected commercial and development which have issued their shares to general public and listed their shares in Nepal Stock Exchange Limited to make them eligible for trading.

The study is based on secondary data. Secondary data have been collected through various book, published annual/trading report of NEPSE, SEBO-N, NRB and concerned banks. Especially the official website of NEPSE and SEBO-N become the main source of secondary data.

In analyzing portfolio risk and return of the selected samples, somewhere the tools applied can not best describe the relationships between the variables under study since portfolio analysis tools are based on various assumptions. Only three commercial banks and three development banks were taken as sample for secondary data. Hence the reliability, accuracy and validity of the research findings depend on these samples.

5.2 Conclusion

Commercial Banks and development banks have been operating efficiently and have been successful in becoming the pillars of economic system of the country. These banks are performing as financial intermediaries providing links between borrower and lenders by mobilizing the scattered resources towards productive sector. It is not possible to achieve such goal without using portfolio concept on the investment strategies which helps to reduce risk and increase return on investment. Most of CBs and DBs are fascinated to investment to invest their resource in more liquid and less risky stores. Using various financial and statistical tools the relevant data are analyzed in previous chapter. Following conclusion are drawn on the basis of that analysis of the study.

- ❖ Considering the overall market return and risk, the development banks provides maximum return and maximum risk. Development banks are seem attractive than commercial banks for investment among all considering risk per unit of return.
- ❖ Considering the return and risk characteristics of the common stock of all the selected Commercial Banks, the common stock of NABIL has highest risk and highest return. However the common stock of NABIL is more attractive among all considering risk per unit return and NIBL seen more risky then other.
- ❖ Considering the return and risk characteristic of the common stock of all the selected Development Banks, the common stock of ACEDBL is more attractive and NDC is seen more risky.
- ❖ All sampled Commercial Banks are providing Cash Dividend most often. NABIL and NIBL are providing cash dividend regularly with stock dividend often. The HBL has provided stock divided with cash dividend regularly. Development Banks are not providing dividend regularly as Commercial Banks. NDCL has not provided any cash or stock dividend in five years sample period. However, DCBL has providing cash dividend every year except fiscal year 2007/08. Stock dividend also provided except fiscal year 2004/05 and 2007/08. ACEDBL is providing on some years only. It is concluded that Commercial Banks can provided regular earnings than Development Banks.
- ❖ Annual trend of NEPSE is in increasing trend up to fiscals years 2007/08 However it was decrease in fiscal year 2008/09. over all annual return is also in increasing trend up to fiscal 2006/07 but it is in decreasing trend after fiscal year 2007/08. The market returns in the fiscal year 2008/09 is Negative. Average rate of return of Commercial Banking index is higher than NEPSE and Risk (i.e. S.D.) is also higher. Average rate of return of development Banking Index is also higher then NEPSE and risk (i.e. S.D.) is also maximum. Among all NEPSE has minimum risk and risk per unit of return is also minimum of NEPSE.

- ❖ Most of stock of Commercial and Development Banks move in the same direction, they are highly positively correlated to the market. The stocks having high positive correlation can not reduce risk on portfolio with market. Only HBL has the lowest correlation. The stocks of HBL can reduce risk meaningfully on portfolio with market.
- ❖ The stock of all sampled Commercial Banks and most Development Banks are under-priced since their required rates of returns are less than average rate of returns. Generally, active strategy can not work effectively in Nepalese market. Long position on these common stocks can work effectively priced since is required rate of return is greater than average rate of return. Short position would be effective on that stock.
- ❖ While making two or three assets portfolio (i.e. C.V) is mainly depend upon the proportion investment of NABILS'S stock, risk is significantly reduced.
- ❖ Making two or three assets portfolio between Development Banks. Investing large proportion in ACEDBL and small portion in remaining DCBL and NDBL significantly reduces the risk without significantly reduction in return.
- ❖ Forming the portfolio between Commercial and Development Banks, equally weights provident in commercial Banks and Development Banks can reduce risk significantly without significantly reduction in return.
- ❖ On the basis of Sharpe Index, investing higher proportion in NABILS'S stocks among Commercial Banks, and investing higher proportion in ACEDBL'S stock among Development Banks, and investing equally proportion in Commercial Banks and Development Banks when portfolio between Commercial and Development Banks are better performing portfolio as this indicates higher risk premium per unit of total risk.
- ❖ From the testing of hypothesis in different level null hypothesis is accepted and alternative hypothesis is rejected. It is concluded that average rate of return and systematic (i.e. β) of selected Commercial and Development Banks are not significantly difference to the population i.e. market. So selected Commercial and Development Banks are equally volatile to the market.

5.3 Recommendation

This study is basically conducted to analyze the risk and return of securities for the investor's point of view, and based on secondary data analysis. On the basis of major finding of the study, following recommendations and suggestions are provided

- Generally investors think that investment in share market is ever beneficial of the price of shares always increases. But in reality it is not possible to be so. Due to many economic and non-economic factors the share can not provide attractive benefits and the share price do not increase. To take better advantage, the investors are recommended to make stock transaction on the basis of fundamental and technical analysis scientifically. Investor should consider the domestic and international data for analysis.
- Investors should always think not only about the return but also about risk. Investors' objective should be for minimization of risk and maximization of return. To create meet the objective, the investors should invest in negative it can correlated stocks can reduce risk.
- Most of the commercial and development banks are under priced, since their required rate of returns are less than average rate of returns Investors are suggested to invest on these share (under - priced) should be considered before taking the decision about investment. In this situation investors are advised to purchase the stocks and hold the long position to make the profit.
- In Nepalese context, investors don't analyze carefully on the factors other than financial situation, this factors (i.e. political, economical etc) should be considered before taking the decision about investment.
- The stocks which are overpriced (i.e. NDB) should not buy or if they are already holding, should sell them to take more benefits Investors are suggested to short sell the overpriced stocks.
- Many passive investors who don't know about portfolio investment and not to analyze the concern factors. Proper which affects the investment decision are adopting passive investment strategy which means they apply 'Buy and hold strategy' and their trading is not affected by the market factors. They buy the security and wait for dividend. Some investor should follow active investment strategy who have good education and experience and they can do hard work in stock market and take advantages from opportunities. They have the knowledge of portfolio management. To get gain through the investment they should follow active investment strategy.
- It is necessary to establish a '**Information Center**' for investors. The investors should be provided right information timely. Updated and real statements should be published. Manipulate and confusing information should not be published.

- Government should play a vital role to improve the security condition and to promote the investors. Sometimes, the policies made by Nepal Rastra Bank and the rules made by NEPSE are seen as opponent of investors. The policies and rules should be more confidential and easier for investors.

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Appendix - II
Banks Registered

S.N.	Bank's
1	Nepal Bank Limited
2	Rastriya Bank Ltd.
3	Agriculture Development Bank Ltd.
4	NABIL Bank Ltd.
5	Nepal Investment Bank Ltd.
6	Standard Chartered Bank Nepal Ltd.
7	Himalayan Bank Ltd.
8	Nepal SBI Bank Ltd.
9	Nepal Bangladesh Bank Ltd.
10	Everest Bank Ltd.
11	Bank of Kathmandu Ltd.
12	Nepal Credit and Commerce Bank Ltd.
13	Lumbini Bank Ltd.
14	Nepal Industrial & Commercial Bank Ltd.
15	Machhapuchhre Bank Ltd.
16	Kumari Bank Ltd.
17	Laxmi Bank Ltd.
18	Siddhartha Bank Ltd.
19	Global Bank Ltd.
20	Citizens Bank International Ltd.
21	Prime Commercial Bank Ltd.
22	Sunrise Bank Ltd.
23	Bank of Asia Nepal Ltd.
24	Development Credit Bank Ltd.
25	NMB Bank Ltd.

Appendix - III
Development Bank Registered

S.N.	Development Bank's
1	Nepal Industrial Dev. Corp.
2	Nepal Development Bank
3	Uddyam Development Bank Ltd
4	Malika Bikash Bank Limited
5	Siddhartha Development Bank Limited
6	United Development Bank Ltd
7	Nepal cottage and small ind. Dev. Bank Ltd.
8	Narayani Development Bank Ltd.
9	Pashupati Development Bank Limited
10	Sahayogi Vikas Bank
11	Pashimanchal Bikash Bank Ltd
12	Karnail Bikash Bank Ltd.
13	Triveni Bikas Bank Limited
14	Annapurna Bikash Bank Limited
15	Bhrikuti Vikash Bank Ltd.
16	Shubhechha Bikash Bank Ltd.
17	Bageshowori Dev.Bank
18	Sanima Vikash Bank Ltd.
19	Gaurishankar Bikash Bank Ltd.
20	Gorkha Bikash Bank
21	Gandaki Bikas Bank Limited
22	Infrastructure Development Bank Limited
23	Business Devevelopment Bank Limited
24	BiratLaxmi Bikash Bank Limited
25	Excel Development Bank Limited
26	Western Development Bank Limited
27	Himchuli Bikas Bank Limited
28	Arniko Bikas Bank Ltd
29	Nepal Dev. And Employment Bank Ltd.
30	Clean Energy Development Bank
31	Mitery Bikas Bittiya Sanstha Ltd

32	Tinau Bikas Bank Ltd
33	Gaindakot Development Bank
34	Mukrinath Bikas Bank Ltd
35	Sewa Bikas Bank Ltd
36	Kankai Bikas Bank
37	Publiuc Develoipment Financial Instution
38	Mahakali Bikas Bank Ltd
39	Ace Development Bank Ltd.
40	Sagrila Bikash Bank Ltd
41	Bhrgab Bikas Bank Ltd
42	Vibor Bikas Bank Ltd
43	Resunga Bikash Bank Ltd
44	Rara Bikas Bank
45	Diyalo Bikas Bank
46	Country Development Bank
47	Kasthamandap Dev. Bank
48	Apline Development Bank
49	Nilgiri Bikas Bank Ltd
50	Corporate Development Bank
51	Kamana Bikas Bank
52	City Bikas Bank Ltd
53	Garima Bikas Bank Ltd
54	Biswo Bikas Bank Ltd
55	Pathibhara Bikas Bank
56	Professional Bikas Bank
57	Kabeli Bikas Bank Ltd
58	Purnima Bikas Bank Ltd